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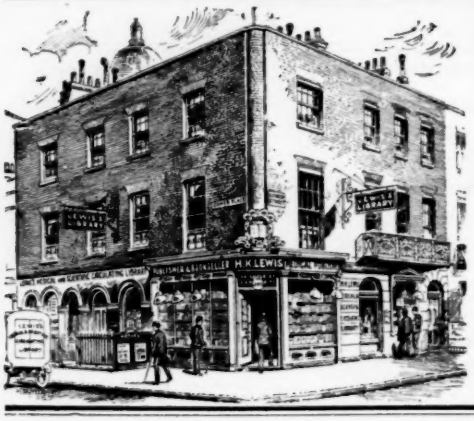

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An Address

ON

SOME CHANGES IN OBSTETRIC PRACTICE

SINCE THE FOUNDATION OF THE MEDICAL SOCIETY OF LONDON.

Delivered before the Society on Oct. 8th

BY HERBERT R. SPENCER, M.D., F.R.C.P. LOND.,

OBSTETRIC PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL; PRESIDENT OF THE MEDICAL SOCIETY OF LONDON.

As medical societies and medical men advance in years I think it is useful to cast their view backwards on the past in order the better to appreciate the present and to order the future. In order to review the history of a subject of present interest, I propose to consider some changes in obstetric practice, particularly in dealing with cases of contracted pelvis, which have occurred during the 150 years of the lifetime of our Society.

The Medical Society of London was founded in 1773, at an important period in the history of British midwifery. The renaissance of midwifery occurred later in England than in continental countries, and dated from the publication in 1651 of William Harvey's "De generatione animalium" with the chapter on labour, which was the first original English work on midwifery. The conservative principles and the observation of nature which Harvey advocated had been carried on by a succession of teachers, of whom Smellie—one of the greatest obstetricians of all times and countries—had died only ten years before the Medical Society was founded; he was succeeded by William Hunter, Denman, Osborn, and others.

The practice of midwifery during the preceding century was slowly passing into the hands of men-midwives since Clément had been ennobled by Louis XIV. and appointed "accoucheur" to Madame la Vallière in 1673. The advice of Harvey to imitate Nature, "who is a perfect operatrix," had been in the main followed by British obstetricians, who have always considered the interests of the mother superior to those of the child. This attitude, which is indubitably the best for cases where the pelvis and child are of normal dimensions, led to the death of many children and mothers when it came to be applied in cases of contracted pelvis. For cases of slight contraction the powers of Nature were often sufficient, aided by the "hanging-legs" position of the mother (Scipione Mercurio, 1595). Version—an ancient operation revived by Ambroise Paré and recommended by Harvey "when there is necessity for handiwork in the business"—and forceps, invented by Chamberlen and greatly improved by Levret, Smellie, and Benjamin Pugh, proved unsatisfactory when serious contraction of the pelvis had to be dealt with. Experience has shown that these measures involve considerable risk to the mother and child; and the dreadful alternative, embryotomy, necessitates the sacrifice of the child.

EIGHTEENTH CENTURY ADVANCES IN THE STUDY OF THE CONTRACTED PELVIS.

At this time important advances were made in the study of the contracted pelvis. Smellie, in 1754, had first given a representation of the rickety pelvis. At the same time he measured the diagonal conjugate of the pelvis, and R. W. Johnson, in 1769, published his method of direct measurement of the true conjugate diameter with the hand. In 1772 Stein published a description of his internal pelvimeter, and in 1775 Baudelocque described his instrument, which is still used for the measurement of the external diameters of the pelvis. Smellie's plates (published in 1754) and W. Hunter's "Gravid Uterus" (1774) raised the artistic representation of pregnancy and labour to the highest point of excellence. Sir Fielding Ould, who was master of the Rotunda Hospital from 1760–66, made the first observations on the entrance of the head into the pelvis and laid the foundations of the "mechanism of labour." He pointed out the danger of the high forceps operation in cases of contracted pelvis, invented an instrument (the "terebra occulta") for perforating the child's head, and stigmatised Cæsarean section as "a detestable, barbarous, illegal piece of inhumanity."

At this time, too, there was a great movement in the world towards the development of the special study of obstetrics. Lying-in hospitals and chairs of obstetric medicine were being founded, particularly in Italy. At Padua, where Harvey had studied, a chair of obstetrics was instituted in 1769. In Vienna extensive lying-in wards were being built in the Allgemeine Krankenhaus, and were opened in 1784.

L. J. Boër.

In 1786 Lucas Johann Boër (1751–1835) went to study in Paris under Baudelocque, Lauverjat, and others. After spending 15 months in Paris he came in 1787 to England, where he studied under Denman, Caborn, Clarke, and Lowder. His travels in Great Britain, where midwifery was conducted on conservative—or at least expectant—lines following the teaching of Harvey, Smellie, and W. Hunter, made a great impression on Boër; "he had learnt in France what art, in England what nature could do." He carried out his conservative principles while professor of the lying-in wards of the great General Infirmary in Vienna, which he raised to the first position in Europe. Boër held the chair of obstetrics in Vienna for 33 years. In 2926 labours he only employed the forceps 19 times and perforated the head eight times. He laid down very strict rules for the artificial interference with labour, insisting that this should only be resorted to in cases of necessity and then in the gentlest and most suitable manner; "all artificial means apart from strict necessity are mere bungling, involving the risk of torturing and destroying mother and child." While Boër was in Paris he saw the patient Souchot, on whom Sigault had performed symphyseotomy; she was suffering many discomforts as a result of the operation—the uterus was prolapsed, the pubic joint was ununited, and there was incontinence of urine from a fistula. On the continent other attempts were made to solve the difficulty of the contracted pelvis by symphyseotomy and by Cæsarean section, but the results of these operations were not such as to commend them to the British obstetricians.

Lucas's Restricted Diet.

Measures directed towards the mother having proved unsatisfactory, an ingenious attempt to overcome the difficulty of labour in contracted pelves by procuring a small child by restricting the diet of the mother was made by James Lucas, surgeon at the Leeds General Infirmary. His paper was read before the Medical Society of London on Sept. 8th, 1788, was communicated by our founder, J. C. Lettsom, and is printed in the second volume of the Memoirs of the Medical Society of London (1794). The treatment consisted in "temperance in diet, a diminution in the usual quantity and a change in the quality of the food, an increase in exercise, the occasional loss of a few ounces of blood, and the moderate use of cooling aperients. This regimen was more strictly enjoined in the last months of pregnancy from a persuasion that an observance of it in the former months would avail little if neglected in the latter."

Lucas mentions a case of contracted pelvis where embryotomy had been performed in the two previous labours; under his treatment the next labour was remarkably less tedious and the child was delivered without difficulty. He gives other instances of the benefit of this treatment. This method of starving the mother to diminish the size of the child is usually attributed to Prochownick, who published a paper on the subject in 1901. It is interesting to find that it

was first published by the Medical Society of London more than a century before. The method, of course, has its limitations and is very rarely employed at the present day, but I have recently seen a patient who was successfully delivered in America of a small child after adopting the treatment recommended by Lucas.

SYMPHYSEOTOMY AND PUBIOTOMY.

In the year 1772 Jean René Sigault published a paper, "An in Partu Contra Naturam Sectio Symphysis Ossium Pubis Sectione Cæsarea promptior et tutior?" Five years later, on Oct. 1st, 1777, he first performed the operation on a patient named Souchot, delivering her of a living child, the mother recovering with the discomforts and inconveniences already mentioned. The Faculty of Medicine of Paris had a medal struck in Sigault's honour, and in many directions there was great enthusiasm over the operation. But next year, in 1778, Piet reported that he had previously delivered the patient Souchot of a large child with prolapse of the cord without much difficulty, and thus took away a little of the credit of Sigault's achievement. Gradually the enthusiasm died down on the continent, and in England the operation was looked on with disfavour, mainly owing to the researches and writings of the Hunters and Denman. The first time this operation was performed in England was in 1782, by Welchman (*Lond. Med. Journal* for March, 1790). The child was dead and the mother succumbed. It was only in Italy that the operation continued to be performed, and that sporadically, till it was revived by Morisani in 1881 and by Pinard in 1900; the latter in 100 operations had a mortality of 12 per cent. for the mothers and 13 per cent. for the children.

Since that date the division of the symphysis and its modification pubiotomy have been extensively practised on the continent, and to a less extent in this country, with a gradually diminishing rate of mortality. The reason why it has not been more in favour is that it inflicts considerable injuries on the mother, and has a higher rate of mortality for the child than Cæsarean section. It has the advantage that in a doubtful case it permits a trial of the effects of labour without increasing the risk of the operation, and may be employed in a limited class of cases of slight pelvic contraction. In this country, however, the enthusiasm of some of its advocates appears to have evaporated. I have never performed the operation, and am of opinion that it is very rarely indicated if the cases of contracted pelvis are properly investigated during pregnancy. The disadvantages of symphyseotomy and pubiotomy have led to other operations for enlarging the pelvic cavity, such as excision of the pubic bones and of the sacral promontory; but these operations have not led to any practical results.

INDUCTION OF PREMATURE LABOUR.

Of this life-saving operation, purely English in origin, we have the first account in Denman's Introduction to the Practice of Midwifery.[1] It was given to Denman by Dr. C. Kelly, who informed him that "about the year 1756 there was a consultation of the most eminent men in London at that time, to consider the moral rectitude of, and advantages which might be expected from the practice, which met with their general approbation. The first case in which it was deemed necessary and proper fell under the care of Dr. Macaulay, and it terminated successfully. The patient was the wife of a linen-draper in the Strand. Dr. Kelly had himself performed the operation three times on the same woman, and twice the children had been born living." Denman defines the limitation of the operation in these words: "It is in those cases only in which there is a reduction of the pelvis to a certain degree and not beyond that degree that this operation ought to be proposed or can succeed." He mentions the case of a lady of title who had had four dead children at term. Labour was induced early in the eighth month of her pregnancy and the child was born alive and survived. Denman induced premature labour by puncturing the membranes, and stated his opinion that the operation is perfectly safe to the person on whom it may be performed. Puncture of the membranes is still used by some obstetricians—e.g., v. Herff—as a means of inducing labour; but the favourite method is the bougie method, first employed by Sir J. Simpson in 1854. It is usually described as Krause's method; Krause's publication, like Simpson's, is dated 1855.

The induction of premature labour has always remained an essentially British and mainly English operation. In France it was opposed by the great authorities Baudelocque and Capuron, and not till 1830 was it favoured by Stolz. In Paris it was first performed by P. Dubois in 1840, but was condemned on insufficient grounds by Pinard in 1900. In Germany Wiedmann wrote in its favour in 1779; his pupil Wenzel was the first to perform it in 1804, and his paper, with Froriep's commendation, led to its adoption in Germany, where it is still practised, but is by no means a favourite operation. In Berlin it was first employed by v. Siebold in 1819. In the Scandinavian countries it was not performed till the year 1827. In America, Whitridge Williams, of Johns Hopkins Hospital, Baltimore, states that he has never found it necessary to resort to the induction of premature labour in contracted pelvis. His erroneous reasoning in adopting this attitude has been pointed out by Dr. Herbert Williamson in an excellent article.[2] I will only add here that in his alternative treatment by Cæsarean section Dr. Whitridge Williams finds it necessary to resort to the mutilation of the mother by hysterectomy with remarkable frequency.

From this brief historical review of the induction of premature labour it will be seen that the operation has met with little favour on the continent of Europe and in America. If one inquires into the cause it is found in three factors—that the operation has been performed in unsuitable cases, at unsuitable times, and by unsuitable means. The cases of contracted pelvis suitable for the induction of premature labour are those with a true conjugate diameter of not less than 3½ inches; the operation should not be undertaken before the thirty-fifth week from the last day of the last menstruation, and the bougie method of Simpson or rupture of the membranes is the best method for ordinary cases. Champetier de Ribes's bag may be required in special cases; though it has a great disadvantage (amongst others) that it displaces the presenting part. For a pelvis with a conjugate diameter less than 3¼ inches in length Cæsarean section is more suitable, though I have delivered by induction at the thirty-fifth week through a pelvis with a 3-inch conjugate a child who grew up to womanhood. The mother died some years later after an operation for cancer.

Carried out in the manner indicated, induction of premature labour is an excellent operation, giving results to the child less favourable indeed than Cæsarean section, but giving results to the mother even better than those of natural labour at term. The operation has been repeated in one of my cases 12 times, with the result of 12 living children. The larger the pelvis over the 3¼-inch minimum the later the induction should be deferred, but for pelves with a 3¾-inch true conjugate it is better generally to let the patient go to term unless the head is unusually large. It is important that the delivery of the premature child be left to the natural powers, forceps and version being particularly injurious to these infants. Having had a large experience of this beneficial operation, having watched the upgrowing of some of these premature girls to normal womanhood and motherhood, it is more in sorrow than in anger that I see the unpopularity of the operation with many foreign obstetricians, and their failure to follow the three simple rules, above enumerated, which are essential for success.

[1] Third edition, 1801, p. 394.

[2] Jour. of Obstet. and Gyn. Brit. Emp., 1906, vol. ix., p. 195.

ANTISEPSIS AND ANÆSTHESIA.

Before I proceed to consider Cæsarean section for contracted pelvis it may be well to review the development of the antiseptic treatment which has revolutionised this and other operations. In 1772 Charles White, of Manchester, published a treatise on the "Management of Pregnant and Lying-in Women." In this work White speaks of puerperal fever as a putrid fever which is contagious and arises from putrefaction of retained products or from the air of lying-in wards. White's contribution to the study and treatment of puerperal fever was important, and has been dealt with very fully by Prof. Adami in his Lloyd Roberts Lecture.

In 1843 Oliver Wendell Holmes published in the *Quarterly Journal of Medicine and Surgery* a paper on "the contagiousness of puerperal fever," in which he adduces strong evidence of the contagiousness of the disease and points out effective means of preventing it. He specially mentions changing the clothes and washing the hands with chloride of lime after visiting cases of puerperal fever; he reports that by adopting these precautions a doctor was able to attend other cases of labour which ran a perfectly normal course. In 1846 Ignaz P. Semmelweis became assistant in the lying-in wards of the General Hospital in Vienna. From 1784 to 1822 these wards had been under the care of Zeller (1784–89) and Boër (1789–1822), and the mortality from puerperal fever had been 1·25 per cent. over the whole period. Under Boër's successor, Klein, medical students were allowed to practise anatomy and to dress suppurating wounds while attending cases of labour, and Semmelweis noticed that the mortality was much higher in the wards attended by the medical students than in those attended by the midwives. In the five years before Semmelweis's appointment the mortality in the students' wards had risen from 6·56 to 9·92, while that in the midwives' wards had fallen from 5·58 to 3·38. Semmelweis adopted the method of washing the hands with chloride of lime with the result that the rate of mortality fell from 8·3 to 2·3 per cent. It is the undying merit of Semmelweis to have pointed out that puerperal fever arose not only from infection from corpses, but from any putrefying organic substances. What putrefaction was due to was shown by the researches of Pasteur in 1860, and Lister in 1867 gave to the world his antiseptic treatment which laid the foundations of the modern aseptic surgery by which the danger has been almost completely removed from operations which a few years ago were uniformly fatal.

The introduction of anæsthesia by means of ether (Morton, 1846) and chloroform (Sir James Simpson, 1847) was one of the greatest advances ever made in medicine. For prolonged operations, I think there can be no doubt that ether is preferable; but in ordinary midwifery cases chloroform, administered *à la reine*, is still the best and safest means of alleviating the pains of labour and it is excellent, administered until the child is delivered, in cases of the classical Cæsarean section. The attempt to produce painless labour by the injection of scopolamine and morphia has not proved successful, and is not free from danger to mother and child.

CÆSAREAN SECTION.

Cæsarean section has always been interesting, and never more so than at the present day. The origin of the word Cæsarean is unknown. On the supposed birth of Julius Cæsar by means of this operation, based on an error in the translation of a passage in Pliny, Sacombe has given his opinion in the following terms: "Pliny was a lying historian whom it would have cost no more to split the belly of Aurelia with his pen in order to deliver Cæsar than to split the rocks with vinegar to open up a way across the Alps for the troops of Hannibal."

The first volume of the memoirs of the Medical Society of London contains a most learned paper in the form of a letter addressed to Lettsom on the character of Æsculapius. The writer of the letter describes the birth of Æsculapius by Cæsarean section as mentioned in Ovid's Metamorphoses,

> natum flammis uteroque parentis
> Eripuit geminique tulit Chironis in antrum.

Despite these illustrious examples Cæsarean section attained but little popularity until the end of the eighteenth century, although it had been practised on the continent, with only occasional success. In England it was 20 years after the foundation of our Society, in 1793, that the first successful operation was performed on a living woman by Barlow, of Bolton; the child did not survive. Ambroise Paré (1510–90), having seen two Cæsarean sections performed by his pupil, Guillemeau, with fatal results to the mothers, was opposed to the operation. "Je ne conseillerai jamais de faire tel œuvre où il y a si grand péril sans nul espoir." In 1581 Rousset had published the first work on the subject under the title, "Hysterotomotokie." In 1595 Scipione Mercurio had recommended the operation. He had seen patients on whom it had been performed in Toulouse, where he said it was as well known as bleeding for headache. He gave an illustration of the operation and recommended that the incision should be made to the right of the middle line in order to avoid the spleen.

At the time our Society was founded there was a widespread desire amongst obstetricians to avoid the horrible craniotomy which at the end of the eighteenth century was performed frequently, especially in England. The most eminent of these obstetricians was Jean Louis Baudelocque. In 1796 Baudelocque performed Cæsarean section on a patient who had previously had a living child at term; the patient died three days after the operation. As a result of this unfortunate experience Baudelocque was assailed with the most violent obloquy by Jean François Sacombe, an eloquent, witty, and scurrilous charlatan who occupies such a remarkable position in the history of Cæsarean section that a few particulars of his career may be worth mentioning.

J. F. Sacombe.

Sacombe was born about the year 1750 at Carcassone. After studying obstetrics at Montpellier and in England under Osborn and W. Hunter, he went to Paris to practise as an accoucheur. He gave out that he could deliver any patient with his hand alone, without the use of any instrument. He was especially bitter against those who performed Cæsarean section, and from the year 1790 onwards he disseminated his views by lectures, pamphlets, and posters. In one of the pamphlets he pilloried Baudelocque as a "murderer," for which libel he was condemned to pay a fine of 3000 francs. Unable to pay the fine he fled from Paris, but returned under the altered name of Lacombe in 1813. Having lost his obstetric practice he gained a living by selling secret remedies. "Deserted by Lucina, he paid attention to Venus," wrote a work entitled "Venusalgia," and died discredited and neglected in 1822. In order to carry on his campaign against Cæsarean section, Sacombe founded his "École anticæsarienne" in 1798. Here lectures were given and an annual festival was held at which a silver medal was awarded to one of the pupils; on one side of the medal was the figure of Hercules slaying the Hydra, with the inscription, "No more Cæsarean section"; on the other side a beehive and flying bees, and the inscription "Sacombe's anti-Cæsarean School." The recipient of the medal had the privilege of embracing Madame Sacombe. A statute of Bonaparte was set up in the school, and Sacombe dedicated one of his works to him, and at one time praised the Consul for "muzzling the Cæsarean tigers." In 1815, however, he was imprisoned for writing against the Emperor. Sacombe was a prolific writer, both in prose and verse. In his "Lucine française" (1803) he gives an account of François Rousset, whose work in Cæsarean section had been highly praised by Haller and Portal. Several faculties of medicine had disputed the glory of conferring a degree on Rousset, and Catherine de Médicis

had appointed him her physician. "However, I resolved," says Sacombe, "to overturn this colossal statue, to break it and to prove to my pupils that celebrity in medicine can only be desirable when based on talents and virtue. I will demonstrate that Rousset was neither a physician nor a surgeon, but a fanatic and ignorant criminal, and the vile instrument of depopulation of which the infamous Catherine de Médicis made use against the Protestants."

FIG. 1.

En-tête appearing above the foreword to J. F. Sacombe's "Elémens de la science des accouchemens," published at Paris, Germinal an X. (1802).

In his "Elémens de la science des accouchemens" (1802) he styles himself "professeur de médecine et de chirurgie des accouchemens," yet he speaks contemptuously of accoucheurs as "hermaphrodites of the art" and "midwives in breeches." Of Clément, the first "accoucheur," he writes:—

> Clément dut au hazard sa vogue et son crédit
> Il enrichit moins l'art que l'art ne l'enrichit.
> Accoucheur des Laïs, en dépit de Lucine
> Clément fit fortune où maint amant se ruine."

Sacombe's "Elémens" contains a portrait of the author and a plate of the École Anti-Cæsarienne, with a figure of the Cæsarean Hydra struck down 30 brumaire, an vii. (Fig. 1). Of this monster he writes: "Born in the midst of the civil wars which desolated France towards the middle of the sixteenth century the Cæsarean Hydra, attracted by the odour of human blood, has raised again its hideous head amidst the scaffolds which crowned the soil of France at the end of the eighteenth century." He ends his work: "My task is complete; I have avenged nature and consoled humanity in giving the death-blow to the Cæsarean Hydra."

It was, however, not by the École Anti-Cæsarienne nor its discredited founder, but by the almost uniformly fatal results of the operation at the end of the eighteenth century, that the performance of Cæsarean section was rendered infrequent.

Modern Cæsarean Section.

In 1866 Murphy found that of 56 operations in Great Britain 46 had terminated fatally (82 per cent.). Even as late as 1874 the maternal mortality was 54 per cent. in Europe and America. In 1876 Porro introduced his method of amputating the uterus after the section. The effect of this, combined with Lister's antiseptic method, was to lower the death-rate considerably, so that in Truzzi's great collection of all the "Porro" operations published up to 1901, the death-rate was reduced to 24·8 per cent. In 1882 Sänger introduced his method of suture, which still remains the favourite, and though various modifications have since been recommended, such as the incision into the lower segment and the subperitoneal and transperitoneal incisions, the Sänger conservative method, with silk sutures carefully buried by a continuous peritoneal stitch, has advantages over other methods in uninfected cases. The advantages of the Sänger incision and suture are: (1) The rapid delivery of the child in an unasphyxiated condition; (2) the operation can be repeated with safety; (3) adhesions and rupture are rare if the wound be properly sutured with silk.

The results of the modern Cæsarean section in non-infected cases are highly satisfactory. Thus, Routh, in 1910, found a maternal mortality of 2·9 per cent. in "clean" cases, of 10·8 per cent. in cases with ruptured membranes, and of 34·3 per cent. in cases where frequent examinations or attempts at delivery had been made. From those and from figures collected by Holland (who dealt with hospital cases only) it is seen that to obtain a low mortality rate it is necessary that the mothers should not be infected when operated on. In such cases the operation should be free from mortality and in my personal practice has been so.

The safety of the operation in skilled hands has led to great abuse by its performance in cases in which it is quite unnecessary and often quite unsuitable. I have known it proposed for a patient with a large pelvis, solely because she was 38 years of age; she was easily delivered by nature of a 9 lb. child. When we read of hospital staffs and even individuals performing 100 Cæsarean sections in a year, it is time to make a protest against unnecessary operative interference. The most marked instance of "meddlesome midwivery" is contained in a work by I. W. Potter, entitled "The Place of Version in Obstetrics" (1922). This author delivered 1130 women in the year ending August 31st, 1921; of these 100 were delivered by Cæsarean section, and 938 were delivered

FIG. 2.

Obverse and reverse of medal struck in honour of Edoardo Porro in 1901 to commemorate the twenty-fifth anniversary of his first hysterectomy following Cæsarean section.

by version. It is to be regretted that such a line of practice should be advocated, as it will inevitably be attended with disaster in the hands of less skilful imitators.

Francis Bacon commends as excellent for the advancement of learning the keeping of Registers of Doubts, with the caution that "when the doubts be thoroughly sifted and brought to resolution, they be from henceforth omitted, discarded, and not continued to cherish and encourage men in doubting." In obstetrics there have been many doubts. But doubt that natural labour is in ordinary cases preferable to operative labour should have been discarded long ago.

In June, 1923, there appeared[3] a thoughtful and remarkable article on Cæsarean section, in which the author says, "in the minds of certain obstetricians and surgeons Cæsarean section is the only method by which a self-respecting patient can be delivered and maintain her standing in the community." He also states "that the mortality statistics of Massachusetts show that of the women dying during pregnancy and labour in a given period approximately one-third die of complications which have been treated by Cæsarean section." Finally, the writer of the article appeals for protection for women in childbirth against the ill-judged enthusiasm of the untrained obstetrician. Cæsarean section, to which Sacombe thought he had put an end in 1798, has shown marked evidence of revival, and his hydra has developed heads non-existent in his day. The performance of Cæsarean section for cases of placenta prævia, accidental hæmorrhage, malpresentations, and eclampsia is being overdone, though not to the same extent as for "contracted pelvis."

It is sad that such a beneficial operation as Cæsarean section, which has been developed to such a pitch of perfection that a woman, however deformed, can be delivered with safety to herself and child, should be brought into discredit by being performed in cases for which it is unnecessary.

I have endeavoured to show some of the changes which have occurred in the treatment of contracted pelvis in the lifetime of the Medical Society of London. Further improvement of the treatment depends on more accurate measurement of the pelvis and fœtal head, probably by means of X rays. Every woman should have her pelvis measured to see if she is fitted for childbearing. During pregnancy she should be examined at the thirty-fourth week to ascertain the presentation of the child and its size relative to that of the pelvis. If the pelvis is contracted, it should be treated by one of the methods suitable for the particular case. Of these methods at the present time, in my opinion, induction of premature labour is employed too little and Cæsarean section too much.

As opinions are of less value than facts, I give the results of three years' practice at University College Hospital, where the routine mentioned above has been adopted. In the three years (1920, 1921, and 1922) 5647 women were delivered. Of these premature labour was induced for contracted pelvis 113 times, all the mothers and 101 of the children surviving; Cæsarean section for contracted pelvis was performed 32 times, all the mothers and 30 children surviving. Craniotomy was performed four times (twice for dead children and twice for hydrocephalus); the four mothers recovered. Forceps were used, for various reasons, 168 times—i.e., in less than 3 per cent. of the cases—all the mothers recovering. I am indebted to the obstetric registrar, Mr. Leslie Williams, for these figures.

Cæsarean section entails risk of hernia, of adhesions, and of rupture in subsequent pregnancy. These risks are probably avoidable in aseptic cases by proper suturing and sutures; their magnitude can only be ascertained when obstetricians publish all their cases instead of a selection of cases done in favourable conditions before or in the early stages of labour, later cases being treated by craniotomy or hysterectomy. The sterilisation of a woman after Cæsarean section in an uncomplicated aseptic case is, in my opinion, not justifiable; in complicated cases hysterectomy is sometimes required.

In conclusion, I hope I may be pardoned for bringing a somewhat technical subject before the Medical Society of London. In the past some hard things have been said of obstetricians; in recent days, however, they have been commended as integrators of medicine. Agreeing with Sir Clifford Allbutt as to the importance of that integration, I have placed my views before a Society which, by its constitution and practice, is the best example of the advantage to be derived from discussion of medical subjects by physicians, surgeons, and general practitioners.

[3] Boston Medical and Surgical Journal, June 14th, 1923.

An Address
ON
MANIPULATIVE SURGERY.

Delivered before the Section of Orthopædics of the Royal Society of Medicine on Oct. 2nd

BY R. C. ELMSLIE, M.S. LOND., F.R.C.S. ENG.,
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THE use of manipulative methods in surgery is constantly being brought before the public and has perhaps been specially prominent during recent years. It is a branch of work frequently taken up by unqualified practitioners, probably because it is easily acquired and can be carried out with comparatively little training or experience and with very considerable immunity from gross accidents. Formerly such practitioners were called "bone-setters," claiming that they replaced small bones in the course of their manipulations. Wharton Hood states that Hutton really believed that he did this. This term, "bonesetter," is a very ancient one and was formerly applied to both regular and irregular practitioners. In the seventeenth century there was a "bonesetter" and an "assistant bonesetter" on the staff at St. Bartholomew's, both of them presumably surgeons. Recently, however, the irregular practitioner has become known as a "manipulative surgeon," rather than as a "bonesetter." The claim to replace small bones is difficult to sustain in view of the knowledge of anatomy now possessed by many of the general public and of the possibility of confirmation by X ray photographs. It is now more often made by the comparatively new school of osteopathists, rare still in this country, but very numerous in America. These practitioners, in spite of radiography, are able to propound their claims to replace bones in the comparatively complicated osteology of the spine.

Sir James Paget investigated bonesetting, and published a clinical essay upon the subject in 1867. His teaching was followed up by Howard Marsh, who lectured almost yearly at St. Bartholomew's upon the subject. The following paragraph from Howard Marsh's writings is worthy of quotation, as it puts many of the facts in a nutshell:

"Chirurgery, or handicraft, began, as we may well believe, in attempts to pull-in dislocated bones, to straighten distorted joints, and to restore movement to stiff limbs. In this dawn of the art nothing was known of anatomy or pathology; it was only seen that a limb was bent or stiff, and force was employed to overcome the defect, just as it might be used to straighten a crooked bar, or loosen a rusty lock. Soon, however, the primitive operators of those early days became ranged in two groups: the mere empirics, who went straight to the point of trying what force would do; and those who endeavoured to ascertain the nature of particular cases and the difference between one case and another—those, in other words, who cultivated pathology and diagnosis in order that they might use force with safety and advantage. The results of practice conducted on these different lines can easily be imagined. The empirics, applying force in all cases alike, and thus

involving their patients in a mere game of chance, did good whenever such untempered force as they could use was appropriate, and harm whenever it was unsuitable; those who used force only when they could see a reason for doing so, and when they thought it was safe, while they did little harm, often, as their diagnosis was very rudimentary, missed an opportunity of producing a cure. In these conditions the empirics frequently had the best of it. Regular, but as yet very ill-informed, practitioners were so often beaten in their encounters with disease that they lost credit in the public eye; while the empirics, making the most of their cures, and not seldom laying the blame of their failures on the surgeon whose previous treatment they alleged had done all the mischief, were credited with powers that approached the miraculous. And we can understand their success, for every surgeon now well knows that instances are common enough in which pain and limited motion, resulting from sprains and other injuries, may at once be set right by even rough and unskilled movements, or, indeed, by an accidental wrench."

Wharton Hood, gaining experience from working with the bonesetter, Hutton, showed how some of the methods of treatment of injuries formerly in general use led to the production of stiff joints which could be easily righted by simple manipulation. More rational methods of treating injuries, together with the evolution of a well-trained and experienced body of masseuses, have greatly diminished the number of cases of gross stiffness of joints after injury, the class of case most often quoted by Paget, Marsh, and Wharton Hood. Yet the dramatic successes of the unqualified manipulator continue, and it behoves the medical profession to look to its methods and to find out why so many of these cases pass into the hands of the unqualified.

FACTORS IN FAVOUR OF THE UNQUALIFIED PRACTITIONER.

Certain external factors must inevitably work in favour of the unqualified. Of these one of the principal is the inherent tendency of the public to believe that the irregular practitioner must have some peculiar ability, either a special skill in methods of manipulation unknown to the profession, or an almost occult power of seeing what is wrong inside or what is the effect of his manipulations. A second factor is the unrestricted power of the unqualified to advertise, either directly or through the mouths of their patients. A third is perhaps the most important: it is that the failures of the unqualified are in almost every case hidden. The patient who visits a bonesetter and is cured boasts of the fact widely, but those who are not cured or who are made worse are perhaps a little ashamed that they have been gulled, they say nothing of their experience, unless perhaps to a medical man who subsequently treats them, and who discreetly maintains silence. For the failures of the unqualified manipulator are numerous, almost as numerous as his successes. The gross cases quoted by Marsh, who mentions two cases of sarcoma and one of spinal caries treated by manipulation, are perhaps uncommon at the present day. Yet I personally have seen many failures by commission or omission. Among the former I may mention myositis ossificans around the knee, rendered so bad by the manipulations of a bonesetter that the patient had to submit to complete rest of the joint for two and a half years before movement returned; a youth with a slight spinal injury subjected to manipulation of the coccyx, which was loosened, and the patient converted into a confirmed neurasthenic with coccydynia; a young woman converted by osteopathic manipulation into an apparently hopeless neurasthenic; and a woman with a large loose body in the knee which was manipulated into such a position that it blocked full extension of the knee for four years.

I need only mention more gross cases of obvious fraud, the treatment of a joint with bony ankylosis by manipulations repeated over a period of a year, the patient being promised a restoration of mobility; a dislocated thumb treated for three months with improvement of movement *in the direction of excessive hyperextension;* and a shoulder stated by a bonesetter to be dislocated, whereas it was normal; when confronted with an X ray showing the joint in place, he countered with the X ray of a dislocated shoulder, which he demonstrated as the normal position.

Errors of omission are also not uncommon. The unqualified manipulator refuses to treat a patient on the ground that the condition does not come within his province and a cure subsequently results from a simple manipulation carried out by a qualified medical man. In addition to these, cases in which manipulation has failed to cure the original condition or in which there is a recurrence of trouble (for example, displacement of a damaged semilunar cartilage) come within the experience of most of us. I do not suggest that the bonesetter is to be blamed for this last class of failure. Usually in these cases he has carried out a rational method of treatment. If his patient has any complaint to make, it is because he has been promised a certain cure where no certainty was possible. But when the failure is due to insufficient care in diagnosis, or to an inadequate knowledge of pathology, or to the use of irrational methods, then the manipulator should be blamed.

We all have our failures; medicine is not an exact science, and no doubt many of us have failed to cure patients who have subsequently been successfully dealt with by the unqualified manipulator, just as some of us fail to cure patients who are afterwards cured by our colleagues, or as the unqualified manipulator has failed to cure patients with whom we afterwards succeed. The real interest of the profession, and particularly of the orthopædic surgeon, is to frame such rules of treatment as will leave as small as possible a number of cases for the unqualified manipulator to treat.

SUGGESTIONS FOR THE ORTHOPÆDIC SURGEON.

Looking back in my own practice I venture to make these suggestions to you all. First and foremost, in treating all bone, joint, and muscle injuries, first form as accurate as possible a judgment of the pathology of the condition present. When there is an inflammation or other condition indicating rest and contraindicating mobilisation, say so. If your judgment is accurate, your patient will not be cured by a practitioner who takes up the opposite view. A common error is to assume that the inflammatory reaction to a simple injury necessitates rest. This is not so; a sprain, provided that an important ligament is not ruptured or unduly stretched, recovers most rapidly with normal use, the joint being supported if necessary. An injury to a small portion of muscle requires use as soon as the pain felt will permit it. If the internal semilunar cartilage in the knee has been damaged and displaced, use of the knee as soon as possible after the displacement has been reduced is the best method of treatment. Some years ago I had to treat an oarsman in training for an important boatrace who displaced the internal semilunar cartilage nine days before the race. The displacement was reduced 12 hours after it occurred, and the patient was only kept out of his boat for 24 hours. In the end he rowed with an apparently normal knee and has had no trouble since. This leads me to a second point. Never advise operation for removal of a semilunar cartilage which has been once displaced and successfully reduced; in a large number of cases the accident never recurs.

One often meets with patients who give a history of recurrent trouble with a knee which sounds superficially like a displaced cartilage, but in whom true locking of the knee has been absent. It is my custom to treat all these cases by manipulation, warning the patient that if the cartilage is damaged there may be a recurrence of the trouble necessitating operation. I believe that many of the so-called cartilage injuries cured by bonesetters come into this class, and that there has never been any damage to the cartilage at all. Other cases so cured are analogous to those in which the cartilage is displaced once and once only. In them the cartilage is presumably displaced by the manipulation into a position in which it gives no

trouble and is not liable to become again displaced. I do not believe that the bonesetter has any special tricks of manipulation. If he has, he ought to describe them instead of keeping his knowledge to himself, just as any of us would put on record any new method we had devised. But, as I say, I do not believe that he has any such methods, and this opinion is borne out by the fact that many of us have treated patients with cartilage injuries which have been manipulated by bonesetters not simply once but many times.

It would take me too long to enumerate the many other conditions amenable to treatment by manipulation; they range from joints and muscles painful on account of apparently trivial restriction of movement, to gross cases of stiff joints, of adherent muscles, and of nerves such as the sciatic, which are fibrosed after a long-standing neuritis. I can only make this suggestion, that whenever there is a possibility of improvement by well-judged manipulation, try it. If your pathology is correct, you will do no harm and often you will cure your patient. I do not suggest that you can always promise a cure; how much you can promise must always depend upon individual knowledge and experience. Further, I would say that whenever a joint or muscle is apparently normal, yet painful, it is worth while to try a manipulation. Disease and mechanical defect having been eliminated, no possible harm can result, and in nine cases out of ten some minor adhesions, undetectable by clinical examination, will be felt to give and the patient will be cured.

I believe that we fail to cure by manipulation most often by our failure to give the method a trial. Let us use it freely, restrained only by an adequate knowledge of pathology.

THE RELATION OF GASTRIC ULCER TO CARCINOMA.*

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THE modern doctrine that gastric ulcer frequently undergoes cancerous degeneration, or, conversely, that cancer of the stomach very commonly originates in simple chronic ulcer, has derived most of its authority from workers in the Mayo Clinic. The vast quantity of clinical and pathological material at Rochester, the high level of achievement there in the taking and digesting of case records, and the number of skilled pathologists working in closest contact with the surgeons, all combine to give a power of compiling statistics on such a scale as to command the almost envious respect of the rest of the surgical world.

U.S.A. Literature.

W. J. Mayo,[1] in 1907, stated that "in 54 per cent. of the 69 cases of cancer of the stomach operated upon in 1905 by Dr. C. H. Mayo and myself, the clinical histories and pathologic examinations of removed specimens made it certain that the cancer had its origin in ulcer." In 1909, Wilson and MacCarty,[2] pathologists to St. Mary's Hospital, Rochester, published a report on 218 specimens of resection for ulcer or cancer, 210 being gastric. Excluding a few rarities like gastric adenoma, they found in the material 47 simple ulcers. "Of the 158 cases remaining 5 were ulcers with suspicious aberrant epithelial proliferation, and were labelled 'doubtful.' Of 153 cases of undoubted cancer left, 109 (71 per cent.) gave enough gross and microscopic evidence of previous ulcer to warrant labelling them 'cancer developing on ulcer.' In 11 other cases (7 per cent.) there was considerable evidence of preceding ulcer, but not enough to warrant placing them in the former group. In only 22 per cent. was there little or no pathological evidence of preceding ulcer." In May, 1910, MacCarty[3] quoted his earlier conclusions that 71 per cent. of cases of cancer of the stomach are associated with a definite ulcer, and added, "68 per cent. of the resected ulcers of the stomach, including the duodenal ulcer which rarely becomes malignant, were associated with carcinoma."

Wilson and McDowell,[4] in 1914, in a paper based on 339 cases of resected gastric ulcer, gave further statistics of somewhat similar import, and stated: "It seems probable that gastric cancer rarely develops except at the site of a previous ulcerative lesion of the mucosa." In a paper published in 1920 MacCarty[5] used these words: "Most chronic gastric ulcers larger than 2 cm. in diameter are carcinomatous. The converse of this is not true, because many chronic gastric ulcers smaller than 2 cm. in diameter are carcinomatous."

British Literature.

Among the leading British authorities on the subject Sherren,[7] writing in 1920, quotes three cases of gastric ulcer in which he did a simple gastro-enterostomy, who died of carcinoma seven, five, and four years after operation, though it would appear possible that two of these may have been malignant from the first. He states that in 135 ulcers removed with a diagnosis of simple ulcer, showing no malignancy to the naked eye, 6 (or 4·4 per cent.) showed carcinoma starting in the edge of a simple ulcer on microscopical examination. He adds: "In 57 gastrectomies for cancer, 14 (or 25 per cent.) showed definite microscopic evidence that the malignant disease started in the edge of a chronic simple ulcer." Moynihan,[8] in his recent Hunterian Lecture, says: "Of the cases of cancer of the stomach that I see upon the operation table a steady average of two out of three give a past history that is extremely suggestive of gastric ulcer." He states that in 18·5 per cent. of his excised chronic ulcers, giving no naked eye suspicion of malignancy, one edge of the ulcer only shows early malignant change. (This 18·5 per cent. is a somewhat striking contrast to Sherren's 4·4 per cent.) Walton,[12] in a series of 150 cases of cancer, found evidence of preceding simple ulcer in 45.

We see, then, that these three authorities lend their powerful support, if to a somewhat modified extent, to the teachings of the Mayo Clinic on the subject. H. J. Paterson,[9] on the other hand, is entirely sceptical, and regards the matter as not proven. He states his own experience that only 1 per cent. of the patients on whom gastro-enterostomy is performed for simple ulcer die later of cancer. Spilsbury[10] summarises his conclusions on the morbid histology as follows: "There are commonly found at the edge of the ulcer gland cells which have penetrated deeply into the scar tissue and are cut off from the regenerating glands. They may exhibit an atypical glandular arrangement, or may form narrow columns of cells; isolated cells are also seen. It is these cells detached from the regenerating epithelium and buried in the fibrous tissue of the ulcer which are sometimes referred to as precancerous, and which, from their position and irregular arrangement, are regarded by others as indicating a malignant transformation in the ulcer. It is owing to this interpretation having been placed on the cells by the investigators at the Mayo Clinic that they report a percentage of 68 of the presumed peptic ulcers removed by operation as showing microscopical evidence of malignancy." Spilsbury concludes that malignant transformation of a peptic ulcer must be an uncommon event.

A Scandinavian View.

An important paper on the subject by N. A. Nielsen[11] appeared last year in the *Acta Chirurgica Scandinavica*. Nielsen believes that there is no possibility of agreement on the histological evidence, and turns to the clinical side of the problem. His conclusions are based on a series of 221 ulcer patients, followed for a period of 2½–19 years after the completion of a course of medical treatment. He found

* Read before the Manchester Surgical Society.

that of these 221 patients, 155 had had ulcer symptoms for more than six years, and in this group two only developed cancer. Of 66 patients with ulcer symptoms under six years in duration no fewer than ten developed cancer. This striking contrast Nielsen explains by arguing that the ten cases that died of cancer under six years after the onset of their ulcer symptoms were ulcer-simulating cancers from the beginning, and he concludes that a patient suffering from simple ulcer has no greater liability to cancer of the stomach than an ordinary individual.

The weakness of Nielsen's very careful investigation lies in his material. Only 92 of his 221 patients were operated on, and the remaining 129 were diagnosed on clinical grounds alone. They would therefore almost certainly include some cases of extra-gastric lesions simulating ulcer, and as Nielsen himself admits, a considerable number of duodenal ulcers. I do not think that this criticism vitiates Nielsen's conclusion, but it does undoubtedly deprive his results to some extent of statistical precision.

Terms of Present Investigation: Classification of Material.

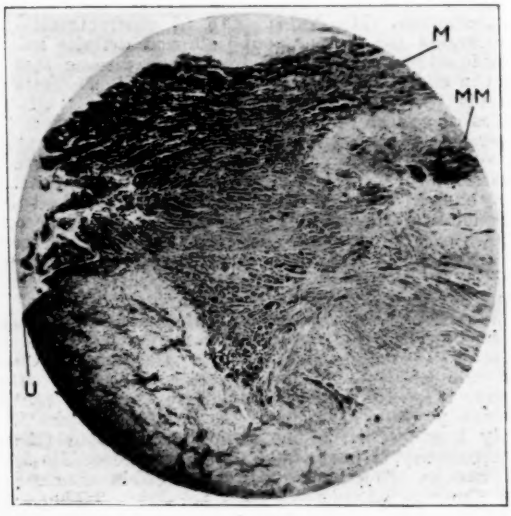
I have set myself in this investigation to determine whether the clinical and histological data in my own small series of cases support or contradict the findings of the Mayo Clinic pathologists that 71 per cent. of cases of cancer of the stomach originate in simple ulcer, and that 68 per cent. of apparent simple ulcers are microscopically cancerous. I desired, in other words, to determine whether a patient suffering from chronic gastric ulcer is in graver danger of developing cancer of the stomach than an average healthy person of similar age.

The cases on which my conclusions are based have been under my own care, and the records have all been taken by me personally or by residents under my direct supervision. In all cases I can vouch for the accuracy of the histories and all relevant details. The cases fall naturally into three groups. Group 1 is a series of 50 cases of chronic gastric ulcers, removed either by partial gastrectomy or local excision. I considered them all simple ulcers on naked-eye examination after removal, and they have all been subjected to careful microscopical examination. Group 2 is a small series, supplementary to Group 1, of ten chronic ulcers treated by simple gastro-enterostomy. Group 3 is a series of 56 cases of clinically proved cancer of the stomach. These three groups will now be discussed in detail.

Group 1.—In collecting this series of 50 chronic ulcers I have carefully excluded cases of duodenal or pyloric ulcer, for I agree entirely with Moynihan's opinion that almost all cases of so-called pyloric ulcer are really in the first part of the duodenum, and no one claims that duodenal ulcers frequently undergo cancerous degeneration. The pre-pyloric ulcer, on the other hand, is definitely gastric, and is usually separated by at least ¼ inch from the pyloric ring. One gastro-jejunal ulcer has been included in the series. The method of dealing with the specimens has been as follows. The stomachs, after removal (and all except two were partial gastrectomies), have been stuffed with cotton-wool to preserve their shape, and fixed in Kaiserling fluid. They have then been slit open, usually along the greater curvature, and as many blocks as seemed necessary have been cut, and a rough diagram made to show the position of the blocks in the stomachs. This part of the work has been done in most cases by Dr. J. H. Dible, lecturer in pathology at the Manchester University.

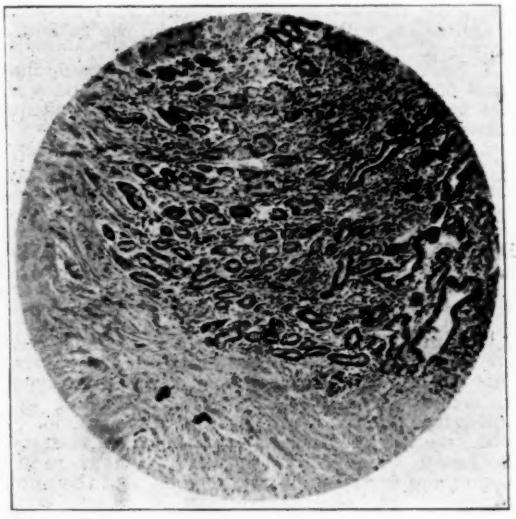
The results of the histological examination of these 50 cases must now be described. Five cases proved to be definitely malignant on microscopical examination, and form a small but highly important subdivision which will be described in detail below. Of the remaining 45 cases, 6 showed irregularity of the glandular epithelium at the edge of the ulcer, which might conceivably be held to indicate the earliest phase of a malignant transformation. In one case this change takes the form of a branching, almost papillomatous arrangement. In 4 there is some irregularity of the arrangement of cells in the tubules at the edge of the ulcer, but what is of more importance, an apparent invasion by some tubules below the line of the muscularis mucosæ (Figs. 1 and 2). Transgression by glandular epithelium across the line of the muscularis mucosæ I take to be the first indisputable evidence of cancer in a gastric lesion; but in these 4 cases the grouping of tubules in their suspicious surroundings is so similar in arrangement and so circumscribed in extent that I have formed the opinion quite definitely that it is merely an infolding of the epithelial edge by scar tissue in an attempt at healing, and is not evidence

FIG. 1.



Microphotograph showing edge of simple ulcer with irregular gland tubules drawn below level of muscularis mucosæ by scar tissue. M, mucosa. MM, muscularis mucosæ. U, base of ulcer.

FIG. 2.



A higher magnification of the irregular epithelium shown in Fig. 1.

of a malignant change. The remaining one of this group of 6 suspicious ulcers shows a cluster of tubules under the muscularis mucosæ at a point far removed from a large and perfectly simple ulcer. I am sure that this appearance is due to an irregular depression in the mucosa, and only include it in the group to drop it out again. The duration of ulcer symptoms in the other 5 cases was 16, 1, 7, 12, and 4 years respectively.

We have, therefore, in this group 5 definite cancers, 5 ulcers which some might suppose to be early cancers, but which I consider to be healing simple ulcers, and 40 simple ulcers which I believe no competent morbid histologist could accuse of malignancy.

I must now describe very briefly the five cases of definite cancer in this group:—

CASE 1.—Male aged 33. Five years' history of pain two hours after food, at first in periodic attacks lasting a week, with intervals of five or six weeks. The last 12 months pain has been felt daily, being relieved by food. Has been vomiting and losing weight lately. Appetite good, but fears to eat. X ray examination showed a filling defect in prepyloric area, which Dr. J. M. W. Morison, the radiologist, thought most probably due to a simple ulcer.

Operation.—Operating with an open mind as to its malignancy, I found a hard mass on the lesser curvature near the pylorus looking very like a growth as seen from the outside, with minute white nodules on the peritoneum a short distance from the main mass. Gastrectomy was performed, but on opening the stomach after removal there was a shallow ulcer, with none of the characteristic raised everted edge of cancer, but a hypertrophic mass of what I took to be scar tissue on the outer coats. The specimen was sent to Dr. Dible as a chronic simple ulcer, and he reported as follows: "Your clinical instinct was a better guide than your post-operative opinion, for it is a malignant growth undergoing ulceration. There is very widespread penetration by the tumour tissue. The little nodules on the pyloric antrum are malignant deposits. All of this goes to suggest that the two conditions, ulcer and cancer, are in such a case in no way connected, except that the malignant growth sooner or later undergoes ulceration. From the appearance of the sections I should say that the prognosis is very bad."

Thirteen months afterwards this patient returned to see me with a secondary deposit in the umbilicus and palpable nodules in the peritoneum.

CASE 2.—Male aged 40. History of seven years' pain, two to three hours after food, in periodic attacks at first. Pain more continuous the last 12 months, with loss of weight and appetite. X ray examination showed pyloric obstruction, and the pylorus and duodenum were not outlined.

First Operation.—A large hard ulcer was found extending from the pylorus some 2 inches along the lesser curvature, with almost complete pyloric obstruction. The ulcer was considered malignant, and a posterior gastro-enterostomy performed.

Second Operation.—Three weeks later the pyloric half of the stomach was resected by the Billroth 2 method. The ulcer seen from the interior after removal appeared to be a large chronic simple one, with dense fibrosis round, but sections showed definite cancer.

The patient did remarkably well at first, but died two years later with recurrence in the liver.

CASE 3.—Male aged 61. Two years' history of pain two and a half hours after food, relieved by taking more food. Little vomiting. Appetite fairly good. Great loss of weight latterly. Previous health good, except for liability to bilious headaches. He never had stomach pains before the last two years. On examination there was a vaguely palpable tumour in the epigastrium. X ray examination showed a filling defect of the pylorus.

Operation.—A hard mass was disclosed in the pyloric region. A Polya gastrectomy was done, and to the naked eye after removal it was doubtful whether the large ulcer present was simple or malignant. Microscopical examination showed an ulcerating adeno-carcinoma with a marked fibrous reaction round it.

This man was operated on over three years ago and is still in good health, with no sign of a recurrence.

CASE 4.—Male aged 66. Two years' history of pain one hour after food, periodical at first and relieved by vomiting. Much emaciation of late. The preoperative diagnosis was simple ulcer.

Operation.—A mass was found extending from the pylorus along the lesser curvature, which was considered to be malignant. Partial gastrectomy was done, and an ulcer with a deep crater was found, which I thought was probably simple. Dr. W. B. Anderton examined it and found it was an adeno-carcinoma.

It should be noted that the age at operation of these four cases was 33, 40, 61, and 66, while they had been ill 5, 7, 2, and 2 years respectively. The four cases are of great interest in our present discussion. They all simulated simple ulcer in their clinical history, in that the pain was periodic, occurred some long time after food, and was relieved for a time by taking food, while the appetite in most was good. But I can find nothing in the clinical histories or the histology to suggest that they were cancers originating in simple ulcer. I would maintain rather that they were slow-growing ulcerating cancers of a type that simulates simple ulcer, and that they were cancers from the first. I do not believe that the onset in the last few months of continuous pain, vomiting, and emaciation meant a change from simple to malignant ulcers. A much more probable explanation is that these symptoms meant the development of pyloric obstruction. The presence of scar tissue in the base of an ulcer cannot be accepted as evidence of an old inflammatory lesion, for in cancer of many parts of the body, such as, for example, the breast or colon, scar tissue abounds.

CASE 5.—This case is somewhat different in character. A female, aged 31, gave a history of ten years' periodic attacks of pain after food. Two years ago she was explored by a well-known surgeon with a provisional diagnosis of gastric ulcer. He examined the stomach carefully, but could find no trace of ulcer, and removed a chronically inflamed appendix. Relief after the operation was of short duration. The symptoms returned, and for the last few months before she was referred to me she had had unmistakable symptoms of pyloric obstruction. When I saw her there was a palpable sausage-shaped tumour at the pylorus, unusually smooth and soft for cancer, and visible peristalsis. She was losing weight rapidly, vomiting all her food, and had evidently almost complete pyloric obstruction.

Operation.—I found what felt like a firm fleshy growth involving the pyloric half of the stomach, with enlarged coronary and suprapyloric glands. I did a very extensive gastrectomy, and on slitting the stomach up afterwards found multiple ulcers of the mucosa throughout the pyloric half, with only islands of mucous membrane left between them, while the palpable tumour appeared to be due to an enormous hypertrophy of the muscular wall in the pyloric region, secondary to a cicatricial pyloric stenosis. Once again the microscope disproved the naked-eye diagnosis. It was an intensely active spheroidal-celled cancer, with great tendency to ulcerate. But I cannot accept this as a case of cancer following ulcer, for a careful exploration two years before had disclosed no sign of ulcer, and I think it much more probable that the indigestion of eight years' standing before that exploration was reflex pylorospasm, probably originating in the appendix, and that the cancer was a later and, so to speak, accidental development.

Group 2.—This small series of ten cases is soon dealt with. It consists of 10 cases of chronic ulcer in which simple gastro-enterostomy was done, and the ulcer left in situ. The duration of pre-operative ulcer symptoms averaged 9·3 years, and the average age of onset was 31·1 years. Both these figures, as will be shown below, correspond very closely with those of Group 1, and afford a similar contrast with the cancer group. But such material is not very conclusive in our present inquiry unless followed for a large number of years after operation. Of these 10 cases, 1 was well for a year and then relapsed and died of hæmatemesis in the medical wards of the Royal Infirmary, when post-mortem examination showed an active simple ulcer; 1 was in good health for five years and then died of lung trouble without any gastric symptoms; the other 8 cases are alive and well 4, 6, 4, 3, 10, 10, 9, and 1 year after operation.

Group 3.—This group consists of 56 cases of clinically proved cancer of the stomach, and it is necessary in the first place to set forth the evidence in favour of the accuracy of the diagnosis. Forty-six of these cases were operated on, but in only 11 was I able to do a gastrectomy, and I have only been able to trace the specimens and microscopical sections, the final proof, in 9. Almost all of those operated on without removal of the growth, however, showed, besides the primary growth in the stomach, definite and advanced metastases either in the glands, the

peritoneum, or the liver. I think, therefore, that there was no possibility of error in the diagnosis of the 46 cases operated on. Of the remaining 10 of the series, in 4 the clinical diagnosis, in each case based on a characteristic history with a large palpable mass in the stomach, was confirmed by X ray examination. In the remaining 6 cases there was a characteristic tumour in the epigastrium, with, in all but one case, secondary masses in the liver or omentum, and in the one case without them the history and the palpable tumour were typical of cancer of the body of the stomach. I have carefully excluded a number of cases in which the evidence in support of the diagnosis was not quite conclusive, or in which the records were incomplete, and I have no doubt that all the 56 cases were genuine cancers of the stomach.

Results in Group 3.—The main purpose of this group is to determine whether there was clinical evidence of previous ulcer in a large proportion of the cases, and the result is somewhat striking. In 52 cases there was no history of previous indigestion before the onset of the symptoms of cancer. Of the remaining four cases one had an illness ten years before which was diagnosed as gastric ulcer, and had been quite well after that until 12 months before operation, when her cancer symptoms began. One had attacks of indigestion for ten years before operation, but no hæmatemesis. One gave a history of liability to painless bilious attacks for years. Of one it was simply recorded that he had had years of indigestion. In only three of the 56 cases, therefore, did the clinical history afford any evidence at all of a preceding simple ulcer, and in all three the evidence was inconclusive. The arbitrary division in point of time between the "history of present illness" and "history of previous indigestion" must vary greatly with the different writers on the subject. To summarise a case, as some authors do, in some such words as "History of previous ulcer two years," or "History of cancer nine months," seems to me to be straining our credulity, since it is so much more probable, in a case of gastric cancer with a total history of two or three years' illness, that symptoms have been due to cancer from the first.

Groups 1 and 3 Compared.

The best argument I can bring in favour of this view is to compare the average duration of gastric symptoms in the cases of Group 3, the proved cancers, with the 45 cases of simple ulcer in Group 1. In 54 cases of proved cancer of the stomach in which the point is specifically recorded, the average duration of gastric symptoms was 12·7 *months* (the longest being five years and the shortest five months). In the 45 cases of proved simple ulcer in Group 1 (excluding the five cases of cancer), the average duration of pre-operative gastric symptoms was 10·3 *years* (the longest being 33 years and the shortest one year). On comparing the age at which gastric symptoms first appeared we find a marked contrast between the two groups. In the 45 cases of simple ulcer the average age of onset was 32·8 years; whereas in the 56 cancer cases the average age of onset was 49·9 years. There is, therefore, an average difference of 17 years as regards age of onset between the two groups. The sex incidence is similar in the two groups. The ulcer group contains 25 males and 20 females, while the cancer group consists of 33 males and 23 females.

It is a point of some significance that 13 of the 56 cases of cancer simulated ulcer in the periodicity of their attacks during the earlier stages, and in the preservation of a good appetite, with temporary relief from pain on taking food. In all of these cases the duration of cancer symptoms was longer than the average. This group of 13 cases, with the four cases already discussed in Group 1, lends support to the view that there is a not uncommon type of cancer, comparatively slow in growth, for a while at any rate, which is capable of producing practically the same symptoms as those we associate quite empirically with simple ulcer. I regret that test meals have not been done in enough of my cases to determine whether free HCl is retained in the gastric juice of these ulcer-simulating cancers. The chief clinical distinctions between this type of cancer and simple ulcer consist in the rapidly increasing frequency of the attacks, in spite of medical treatment, until they become continuous, and in the wasting, which is generally out of proportion to the degree of pyloric obstruction.

If the arguments that I have based on the material set forth in this paper be accepted, it may be urged that we lose one of the chief justifications for partial gastrectomy as the routine operation for the treatment of chronic gastric ulcer—viz., the danger of eventual malignancy. In my view, however, the operation of partial gastrectomy for ulcer is justified on two very sound grounds. The first is that the difficulty of distinguishing on the operating table between simple chronic ulcer and ulcer-simulating cancer is so great as to be sometimes insuperable. The second is that partial gastrectomy, either by the Polya or the more conservative Schoemaker method, has proved the most efficient means at our disposal for the restoration to normal health of patients suffering from simple chronic ulcer of the stomach.

Summary and Conclusions.

(1) While one cannot deny the possibility of cancer developing in the edge of a chronic gastric ulcer, or in some part of a stomach that is or has been afflicted by a chronic gastric ulcer, this investigation provides no evidence that the development of cancer on gastric ulcer occurs with anything like the frequency claimed by some authorities. The evidence set forth in this paper points to the conclusion that a patient with a chronic simple ulcer of the stomach is little, if at all, more liable to cancer than a healthy individual.

(2) I find that roughly 30 per cent. of cases of cancer of the stomach give rise to symptoms which simulate more or less closely those which we usually associate with simple ulcer, and I hold that it is this ulcer-simulating cancer which is responsible for the belief in the cancerous degeneration of simple ulcers.

I am greatly indebted to Dr. Dible for his expert histological opinion as to the nature of many of the ulcers dealt with in the work described.

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GLAUCOMA.[1]

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THIS condition of increased intra-ocular pressure, known as glaucoma, is a nightmare to some practitioners, whilst others miss it when the signs are plain. I have not space to discuss the condition at length or to be dogmatic; diagnosis between acute iritis and acute glaucoma is frequently very difficult, whilst the treatment of the two conditions is fundamentally different; but I would give the following advice: When seeing a patient with violent headache and neuralgia over the region of the distribution of the fifth nerve, vomiting, mental disturbance, irregular pulse and mists or light flashes (frequently coloured) in front of the eyes, refrain from diagnosing influenza

[1] Abstract from the presidential address delivered to the Devon and Exeter Medico-Chirurgical Society.

or a bilious attack, for the sight will be rapidly lost and the eye disorganised. Again, in an elderly person complaining of a gradual loss of sight, do not diagnose cataract until you have looked at the pupil area for the fundus reflex with a reflected light; even then, if the area is largely filled with striæ or other opacities it should be remembered that glaucoma is often associated with cataract, or the lens opacities may be secondary to a chronic glaucoma from interference in its nutrition arising from increased pressure. In either case an oculist should examine the patient while the fundus can still be seen, in order to determine the necessary treatment.

The signs of acute glaucoma frequently merge from those of the more chronic type into the eruptive stage. There are often complaints of the prodromal symptoms of transient mists in front of the eye for a moment, rainbow haloes round lights, neuralgic headaches and loss of near sight, especially in the hypermetrope; these are often the only symptoms in the chronic insidious type of the disease. The acute attack may be precipitated by any extra strain, such as a big meal, too much alcohol, mental or physical overwork, or some illness. The chief symptoms have been already given; the vision fails rapidly and in a few hours only hand-movements may be detected. The lids are puffy and the conjunctiva, both palpebral and ocular, is dusky red from venous congestion; the cornea is steamy and may be insensitive to touch or acutely tender; the anterior chamber is shallow and the iris muddy, with pupil moderately dilated, often oval with the long axis vertical, and not reacting. The deeper parts are not visible, but with the fingers the eyeball feels tense and tender on pressure. In acute iritis the onset is not so sudden; the pupil is small and may be irregular, the anterior chamber not so shallow and the cornea not so steamy.

There is intolerance to light in both conditions, as well as in an acute conjunctivitis, from which they must be distinguished. Thus a good light is essential, notwithstanding the patient's protests. If necessary a drop of 4 per cent. cocaine may be used, which will also help by dilating the pupil if the diagnosis lies between glaucoma and iritis. (In ordinary routine cases for obtaining a view of the fundus a drop of cocaine may be used to dilate the pupil instead of homatropine, which is so often used in elderly people with their small pupils. The effects can be neutralised by a drop of eserine before the patient leaves.) Some form of magnification is necessary and a corneal loupe is invaluable, giving a stereoscopic view, but an ordinary magnifying glass will do, giving an enlarged image of the anterior chamber and the iris. The observer will notice whether the pupil is large or small and irregular, with possible synechiæ and a dull listless iris. It should also be noted whether only the superficial vessels are injected, indicating conjunctivitis, or the deep vessels, or both—in which event the trouble is deep-seated. In the chronic type the pupil may have a crenated edge, but it reacts; a lateral light may show a dull pupil area, but again I would urge you never to diagnose a chronic case until you have thrown a reflected light into the eye. If you have not an ophthalmoscope with you an aural mirror will well take its place. Finally, if you find a hard eyeball and a tied-down pupil remember that a secondary glaucoma may develop after a chronic iritis.

Treatment.

Acute glaucoma having been diagnosed urgent steps are necessary. Instil eserine drops, 4 gr. to the ounce, half a dozen times in an hour, giving one drop in the other eye also. Moist or dry heat should be applied, leeches to the temple, and the patient prepared for an anæsthetic. If in a couple of hours there is not a distinct fall in tension and a contracted pupil, iridectomy must be done.

Some illustrative cases will serve to emphasise the condition.

CASE 1.—Female, aged 60, acute glaucoma treated as influenza; eight weeks ill with sudden vomiting, frontal headaches, and a feeling of cold clay round the eye. No pain in the eye at first; after a fortnight redness and watering and loss of sight. Recently coloured lights in the other eye. Early mental symptoms of wandering. Vision: right, 6/18; left, 2/60. Anterior chamber shallow, cornea steamy, immobile dilated pupil, tension plus two, no fundus view. Would not come into hospital; treated with eserine to both eyes. Two months later iridectomy was done for pain. Would not have the right trephined and ceased coming.

CASE 2.—Male aged 45. Subacute glaucoma missed. Seen Jan. 27th, 1919. Under a doctor since Dec. 30th, 1918, with influenza (?). On Jan. 3rd excruciating pains after seeing rainbows for months. Vision: hand movements either eye, tension plus two. Anterior chamber shallow. Treatment of no use.

The following are cases of chronic glaucoma.

CASE 3.—Male aged 63. Bad sight for years, completely gone from right eye, very little remaining in left. Never anything to call attention to his eyes beyond loss of sight; had had no treatment. Vision: right, hand movements; left, 6/60. Discs pale, cupped, and atrophied. The man's mentality was curious; his mother had bad sight at 60, one brother was blind in one eye and almost blind in the other at 42, and another of the family was quite blind at 40.

CASE 4.—Male aged 67. Insidious glaucoma without symptoms. Two years ago had good sight, gradually lost in right and about 12 months ago in left. No pains and no inflammation. I questioned him closely as to the usual symptoms and could get him to admit none, such as mists, rainbows, &c. He had been on drops for most of the time. Vision: right, perception of light only; left, 4/60. Pupils 3 mm. and sluggish, while the anterior chamber was not shallow. Cups filled three-quarters of the discs. Field on the Bjerrums showed a very enlarged blind spot almost reaching the fixation-point. I trephined the left eye and in a month the vision with a minus 0·75 was 6/36(1) and the field had enlarged to almost double. This case illustrates the fact that myotics are only palliatives and do not cure or stop the disease; the latter can only be done by relief of the choked drainage.

CASE 5.—Male aged 73. Slow absolute glaucoma. Bad sight six to seven years in the right eye and two in the left. Under a doctor for five to six years. Lot of pain in the right at times but none in the left. No rainbows, but flashes of light. Pupils 4 mm. and 3 mm., immobile, right iris greenish and tremulous, left blue. Vision: both perception of light. Both corneæ hazy; tension, right plus 3, left plus 2. No right fundus reflex, the pupil being filled with cataract; while a hazy view of the left disc showed huge cupping and atrophy.

The following are cases of secondary glaucoma.

CASE 6.—Female, aged 73, seen in August, 1919. Came up with running eyes, occipital and vertical headaches, and puffy lids with loss of sight. I found the condition of the lids was due to Donovan's solution which she was taking. Vision: right, 6/24(3); left, 6/12. Opacities in right lens and vitreous and guttate choroiditis in both. Some septic tooth stumps. May, 1920, developed cupping and put on pilocarpine drops. Stopped away for some time but in February, 1921, I trephined. She kept vision well in the left eye, but the cataract increased in the right.

CASE 7.—Female aged 62. Cataract secondary to or accompanying glaucoma. Seen July, 1920. Fourteen days before she thought the sight was alright, but then saw coloured lights and had pain at the back of the right eye. Vision: right and left, 6/12. Anterior chamber moderate, considerable opacities in both lenses, spicules, and haze; deep cups seen through the last-named. Tension with Maclean's tonometer was: right, 30; left, 45. Three months later I did a large iridectomy. There is still a steady increase of cataract, but she still sees 6/24 with either eye.

There is no disease harder to diagnose than chronic glaucoma, and only by weighing all the signs can a decision be made between it and early optic atrophy and retrobulbar neuritis. The field of vision in early glaucoma shows contraction of the nasal side, while in optic atrophy it is concentric. The tension should be taken if possible with a tonometer. In shallow glaucomatous cups the disc is pinkish, while in optic atrophy it is pale. There is, however, always some atrophy of the nerve with a cupped disc, and between this atrophy and simple atrophy with a slight depression there is much scope for error in diagnosis. I have seen a fairly advanced case of glaucoma without any visible change in the disc. Chronic glaucoma is almost as common a cause of loss of sight as cataract, and if you bear it in mind many cases can be treated while there is yet time. Acute glaucoma is comparatively rare.

TWO CASES OF *DIPYLIDIUM CANINUM* IN CHILDREN.

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Dipylidium caninum (*Tænia cucumerina*), a common intestinal parasite of the dog and cat, may also occur in man. The number of published cases is, nevertheless, so small that new cases are well worth recording. This worm was first found as a parasite in man by Dubois in 1751. Blanchard, in his work on the parasitology of the dipylidium, collected 60 cases from the literature up to 1907; of these cases 75 per cent. occurred in children of 3 years and under. They were distributed as follows: Austria, 3 cases; Denmark, 21; England, 2; France, 4; Germany, 16; Holland, 1; Norway, 1; Russia, 3; Sweden, 1; Switzerland, 7; U.S.A., 1. Since Blanchard's paper occasional new cases have been noted.

Dipylidium caninum, according to Blanchard's description, is 15–45 cm. or more in length. The head is small, with a club-shaped retractile rostellum armed with 3 to 4 rows of hooks. The genitalia are double, with a genital pore on each side of the segment. The uterus is in the form of a reticulum, in the meshes of which the testicular vesicles lie. Later on it breaks up into a large number of independent capsules, each of which encloses several (generally 8 to 15) round eggs. The mature segments and the ripe segments show a marked bulging of their lateral borders, giving them the appearance of cucumber seeds.

The cysticercoid larval form (*Cryptocystis trichodectis*) occurs in certain insects, especially in the louse and flea of the cat and dog.

The details of the two cases we have to record are as follows:—

CASE 1.—Some fragments of tapeworm passed by a child were examined by one of us (G. R. T.) in the pathological department of the University of St. Andrews. The specimen consists of three short ribbons, measuring 12, 10, and 4 cm. in length respectively, as well as several isolated segments. The shortest ribbon is made up of very small segments, apparently from the neighbourhood of the neck. The head, unfortunately, is wanting. In the case of the 10 cm. ribbon the segments are larger and definitely elliptical in shape. The posterior segments of this ribbon, all the segments of the largest ribbon, and the isolated segments, show a marked bulging of their lateral borders which at once recalls the appearance of cucumber seeds. The curious appearance of a chain of seeds which these segments present at once attracts the attention. An examination of segments from the posterior end of the longest ribbon shows the presence of double genitalia, the two genital pores being placed symmetrically on the lateral margins. One of the isolated segments is found to be ripe and contains a large number of capsules, each of which encloses several rounded eggs. Within the eggs one can make out the six hooks of the hexacanth embryo. The characters noted are those of *Dipylidium caninum*, and, even without the examination of the head, there is no doubt that we are dealing with that tapeworm. Prof. J. F. Gemmill, who has been good enough to examine the specimen, confirms the diagnosis.

We are indebted to Dr. J. Sellar, Markinch, Fife, in whose practice the case occurred, for the following clinical notes:—

The patient was a baby, bottle-fed from birth. Links of a tape worm were first observed in the stools during the fifth week of life. Previous to this the child had been restless, fretting, and not sleeping. There seemed to be slight abdominal distension, but motions, pulse, and temperature were all normal. There was no vomiting. Saline enemata, given every other day, were followed (but not at once) by the passing of larger portions of the worm, such as the specimen sent to the laboratory. This continued for about a fortnight, after which no further trace of the worm was seen. The child quickly recovered as soon as the worm was expelled. In the house there was a small Pomeranian dog, which was made much of by the elder child of the family. The mother has since kept the dog away from the children and there has been no further trouble.

CASE 2.—A mother of six children brought her youngest child, a female infant aged 5½ months, to one of us (J. F.) complaining that it was passing tapeworms in its stools. She stated that the child often looked white, that its eyes were often swollen, that the tip of its nose was sometimes red, and that it slept as much as a child of that age should do, but often wriggled when asleep. It was breast-fed for two months, then bottle-fed, cow's milk being used. There were no past illnesses. The stools at times were green and loose, at other times constipated. The child appeared small for its age, but there was no pallor and its eyelids were not puffy when examined. The mother was advised to keep any further segments for examination. Two weeks later several segments were obtained, and were preserved in normal saline solution. The mother mentioned that freshly expelled single segments moved for a short time. This statement was verified. The movement was of a slow curling nature, the segment bending along its transverse axis while its extremities, moving away from the plane in which they were originally lying, tended to approach one another. The shape of the small chains at once excluded *Tænia solium* and *T. mediocanellata*. A single segment transfixed with a pin and held obliquely to the incandescent light showed two opposed pores at the lateral margins near their middle. On questioning the mother it was found that a cat was kept in the house, and that at the age of 2 months the child had been for a period of 21 hours in a friend's house in which there was a dog.

Prof. W. J. Tulloch, of St. Andrews University, to whom we are indebted for detailed examinations of the specimens from this case, states that the segments are those of *Dipylidium caninum*. At a post-mortem examination on the cat he found no intestinal tapeworms. Seven fleas found on the cat's body were examined for cysticercoids, but as only negative results were obtained, the presumption remained that these particular fleas were not infected with the parasite. Unfortunately it was not possible to obtain the dog.

With regard to treatment, in this instance the child's feeds were more carefully regulated. The action of the bowels was modified to some extent by the use of hydrarg. cum creta and ol. ricini. At the same time the vitamin content of the food was increased in an attempt to get the child into better condition before using an anthelmintic. A dose of castor oil was ordered every ten days. This generally resulted in the expulsion of several segments. Although nothing else was done, segments ceased to appear after the age of 7½ months. The head was not obtained. Weight records were not kept regularly, but the child even now, at the age of 11 months, is considerably under normal, her weight being only 18 lb. The mother has noticed steady improvement since the disappearance of segments from the stools. The child is bright and lively when awake, and the stools are now rarely abnormal in character.

Two questions arise in view of the close contact that too frequently exists between children, dogs, and cats in many of the houses in the poorer quarters of our cities. One wonders if Blanchard's figure can be taken as a true index of the case incidence of the infection in human beings, and how far the presence of these parasites may be responsible for the chronic ill-health and poor physique of some of our slum children. Detailed examination of every tapeworm passed by a child would appear to be necessary to settle this question.

The cysticercoid form of dipylidium occurs in the louse and flea of the cat and of the dog. The cat and the dog become infected by swallowing their own lice and fleas while licking their coats. Presumably human beings are similarly infected by accidentally swallowing infected lice or fleas. In view of the proportionally large number of cases in the early years of life prophylaxis demands the exclusion of dogs, cats, fleas, and lice from the living quarters of the house.

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THE USE OF INSULIN IN GENERAL PRACTICE.*

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THE value of insulin is now definitely established, for sufficient clinical experience has been obtained to make it certain that nearly all patients suffering from diabetes will benefit from its use. Personally, I have seen nearly a hundred diabetic patients who have been treated with insulin, and in every case, without exception, the result was beneficial; frequently, indeed, it was even dramatic. It is most important that insulin should be used only in the proper type of case, for there are many pathological conditions unsuitable for insulin though glycosuria may be present. If, for instance, a glycosuric patient is really suffering from arterio-sclerotic changes, the clearing up of the glycosuria may not materially relieve the condition. Some time ago I saw a patient who was losing flesh very rapidly and getting steadily weaker day by day. A moderate amount of glycosuria was present, and the medical attendant took the view that the case was one of diabetes. Accordingly, small doses of insulin were given with the result that the sugar disappeared fairly rapidly from the urine, but the patient felt no better. Further examination revealed that the glycosuria was but an unimportant and secondary phenomenon, and that the real cause of the trouble was carcinoma of the stomach. Such cases will undoubtedly occur from time to time, but the failure of insulin under these conditions is only what is to be expected. In my own experience, every subject who was suffering from genuine diabetes derived very great benefit from the use of insulin. Probably, it is safe to prophesy that the more we know about insulin and its therapeutic use, and the more careful we are in choosing suitable cases, the better will be our results.

We have now in our hands a satisfactory remedy for the treatment of diabetes, and the question to be discussed is the important one whether insulin may be safely used by the average general practitioner. To this question different people may give different answers. Insulin, like fire, is a good servant but a bad master, and whatever view is taken, the answer must be based on a fairly wide experience of the use of the remedy in various types of patients. My answer, based on my own experience, is that insulin may *be quite safely used by the general practitioner, and I have no hesitation whatever in saying that it is indeed the duty of the general practitioner to use this remedy.* True, stringent precautions must be taken, and some possible contingencies guarded against, but when certain directions are carefully followed, the clinical use of insulin should give no greater cause for anxiety than the use of any other powerful remedy. The most important point in the employment of insulin is to go ahead very gradually. Whatever methods may be adopted in hospitals and special institutions where the patients are always more or less under skilled control, it is courting disaster to use short cuts in general practice. It must be remembered that insulin, when given carelessly, may actually result in the death of the patient. That insulin when given in excessive amounts will produce a certain train of symptoms is well known, but, fortunately, these symptoms are usually not very severe. It is this action of insulin that has to be guarded against in the routine treatment of diabetic patients. If the suggestions to be brought forward later in this paper are carried out, these symptoms will seldom be in evidence, and ought never to be dangerous. On the other hand, every medical man employing insulin should be thoroughly impressed with the fact that he is using a powerful and dangerous, though easily controlled remedy, and that any neglect on his part may end in disaster. Before giving exact details for the clinical use of insulin it will be necessary to consider shortly the nature of the symptoms which may follow the use of this substance.

* Introductory address on the Use of Insulin in General Practice, delivered before the Royal Society of Medicine, Section of Therapeutics and Pharmacology, on Tuesday, Oct. 9th.

Symptoms Produced by Insulin.

The symptoms produced by an overdose of insulin may vary considerably in different patients and even in the same patient at different times, but they generally consist of flushing of the face with sweating, often followed by some degree of pallor. The sweating may be very marked. There is often a sense of constriction about the throat and chest. The patient feels giddy and a marked sense of physical weakness may be present. The limbs are frequently cold, and sometimes the first feature observable is a blanching of the face. In other cases, the initial symptom is a feeling of nervousness or distinct tremulousness, so that the patient cannot coördinate his movements. When he tries to write he sprawls on the paper. In mild cases, the symptoms may be entirely subjective, consisting of nervousness, a feeling of impending disaster or apprehension which the patient cannot explain, or a sense of weakness coming on suddenly.

In children the pulse-rate is frequently accelerated. If the condition is not relieved, the nervous symptoms may become very extreme with intense anxiety and very pronounced emotional disturbances. In very severe cases, sensory and motor aphasia, delirium, and confusion may be present, with collapse and syncope, which may result in a state of unconsciousness. Convulsions, so frequent in the insulin symptoms of rabbits, do not appear to be common in man. Marked increase of muscle tonus with a temporary cataleptic state may be seen occasionally during the return of the patient to consciousness.

The occurrence of these clinical phenomena is associated with the action of insulin in lowering the blood-sugar concentration. When the blood-sugar gets too low, the fact is indicated by the appearance of these symptoms, but it is now certain that patients differ greatly as to the exact blood-sugar percentage that may be present when the symptoms come on. Taking the normal resting blood-sugar as about 0·1 per cent., it would seem that, in certain subjects, even a slight decrease to the region of 0·08 per cent. or so may be associated with insulin symptoms, while in others, a blood-sugar as low as 0·05 per cent. may be present and yet the patient may feel quite well. In a general way, however, it is now established that the train of symptoms induced by insulin do not appear when the blood-sugar is normal or above this, and that they are liable to manifest themselves when the blood-sugar sinks to a subnormal level; the exact level at which they appear depends on some unknown factors present in the patient. The association of these insulin phenomena with a more or less lowered blood-sugar—a hypoglycæmia—is so pronounced that the condition is generally referred to as a hypoglycæmic reaction. It may be taken for granted that when insulin symptoms are in evidence, the lower the blood-sugar the more severe are the symptoms.

Treatment of Insulin Hypoglycæmia.

The symptoms described generally come on from two to four hours after insulin has been given, but, not infrequently, they are observed after four to six hours, and very occasionally up to 10 or 12 hours after injection. If too much time elapses between the giving of insulin and the taking of food, symptoms may be present in less than an hour. Though the symptoms of the hypoglycæmic complex may be very severe, it is fortunate that they respond very easily to treatment. Sugar given by the mouth will very quickly remove the condition, so that there is little or no danger if the patient is carefully warned to take some sugar whenever any symptoms such as those

mentioned follow the injection. Any kind of sugar will do, but glucose is perhaps best. Since it is advisable to get sugar into the system as quickly as possible, it is a good plan to keep a glucose solution (say, 50 per cent. strength) ready to hand and to warn the patient that he must always take from 1 to 2 oz. of this when symptoms are present. This amount may be followed by another ounce if the condition does not show definite signs of clearing up in from 15 to 20 minutes. From the practical point of view, it is very convenient to use barley-sugar. The patient eats a stick or two of this whenever any indication of hypoglycæmia occurs. Patients treated with insulin should always have some such carbohydrate as barley-sugar at hand, so that some may be taken whenever they feel the approach of symptoms. Though the patient may not perceive the onset of the first attack, he soons begins to be conscious of the very earliest symptoms in subsequent attacks; by taking sugar he can often prevent their further development. When insulin is given carefully, no serious hypoglycæmic symptoms should ever ensue, but, obviously, if two large doses are injected and the patient becomes unconscious, more drastic treatment is essential. One of the best means to counteract the condition in the unconscious patient is the injection of 1 c.cm. of a 1 in 1000 solution of adrenalin. If consciousness is regained as the result of this injection, sugar ought to be given by mouth. In many cases it may be necessary to inject glucose intravenously after the epinephrin. Up to 200 c.cm. or more of a 20 to 30 per cent. solution may be used. Subcutaneous injection of glucose into the loose tissue of the abdominal wall may be helpful if the facilities for intravenous injection are not immediately available. Glucose may also be passed into the stomach by a tube, but this is frequently not a very easy procedure in an unconscious individual. In any case, the fundamental point is to get glucose into the blood-stream as quickly as possible. A dose of pituitrin (1 c.cm.) given subcutaneously also produces excellent effects. Where collapse is present, it may be necessary to give stimulants such as strychnine and camphor hypodermically and hot coffee per rectum. A hot drink after the recovery of consciousness seems to help the patient.

Though severe cases of hypoglycæmia with loss of consciousness were fairly numerous some time ago, when our knowledge of the action of insulin was very limited, they should never be encountered when the insulin treatment is carried out on the lines to be described below.

Effect of Insulin on the Diabetic Condition.

Insulin acts in tending to restore the diabetic patient to the condition of the normal individual. Apparently, in diabetes, some substance essential for carbohydrate metabolism is missing or present in insufficient amount, and the injection of insulin supplies this missing secretion. Consequently, the therapeutic use of insulin results in a disappearance or lowering of the urinary sugar and ketone bodies. The excessive blood-sugar is also reduced towards the region of the normal level. In subjects whose diets are carefully correlated with the insulin dosage, the blood-sugar may be kept within normal limits, and the urine free from sugar and ketone bodies. Very careful adjustment of diet to insulin dosage is, however, required to produce this effect, and frequent modification, both in diet and insulin, may sometimes be necessary. It may be accepted as a general rule that insulin will produce no deleterious effects as long as glycosuria is present, so that it is easy and safe to regulate the dosage by examination of the urine for sugar. In the use of insulin, blood-sugar estimations are of great value, but experience shows that they are not absolutely essential in the great majority of cases. When the glycosuria disappears, examination of the urine for sugar does not help us any more, and it is at this stage that blood-sugar estimations are of most value, for without the means of ascertaining the blood-sugar content, we are working in the dark. In some patients, also, sugar may disappear from the urine when the blood-sugar is still very high (even as high as 0·3 per cent. or more), and in such cases it is essential to know the condition of the blood. Generally, however, the disappearance of glycosuria indicates that the blood-sugar is below 0·18 per cent. or so; if the urine continues to be persistently sugar-free, experience shows that the blood-sugar is generally much lower than this, and frequently is found to be more or less normal. It seems to be much easier to reduce a high blood-sugar to the normal level than it is to reduce an already normal blood-sugar to a state of hypoglycæmia.

The Type of Case in which Insulin is Indicated.

One of the most important points for the general practitioner is to make certain that he does not attempt to treat an unsuitable case. On the whole, there is little danger in the use of insulin when the case is a suitable one, and there can be no doubt that the greatest danger lies in the possibility that a practically normal patient may be treated with this substance. As a rule, there is little difficulty in arriving at a conclusion as to the advisability or otherwise of using insulin in any given patient. Too frequently the terrible ravages of the diabetic condition are obvious, and in spite of long and careful dietetic treatment, the subject is reduced to an emaciated helpless condition. He passes large amounts of urine containing sugar, acetone, and diacetic acid. He complains of great physical weakness, and presents a pitiable picture. In such cases, it is too obvious that the end cannot be far off unless insulin is used, and no possible doubt as to its necessity can arise. Other patients, however, may give rise to greater difficulties in deciding whether insulin should be used. A very common type of diabetic is the elderly individual who frequently complains of being generally out of sorts with weakness of the legs and a feeling of being below par, but who has few symptoms characteristic of ordinary diabetes. Examination of the urine may show a large amount of sugar, but no ketone bodies or at least only traces of them. There is no emaciation, and the patient may appear to be in quite good condition. Should we use insulin in a case of this kind? The answer is not always easy to give, but the condition, though apparently of no great importance as far as objective symptoms are concerned, should never be neglected. First of all, a careful dietetic régime should be ordered, but if this is not successful in removing the glycosuria and materially reducing the blood-sugar, insulin ought to be employed. In many of these patients there is not much danger of coma, and some of them live to quite an advanced old age, but this condition is so frequently associated at a later period with definite symptoms that it should never be disregarded.

The chief symptoms observed are: (1) eye changes, frequently ending in blindness; (2) neuritis; (3) intense local, and sometimes general, irritation; (4) muscular weakness and nervous instability; (5) trophic changes, such as gangrene of the extremities. Of these the most tragic is blindness. I have seen a large number of patients of this type who had been suffering from marked glycosuria and hyperglycæmia for many years and in whom the eyesight is now practically gone. Much can be done to prevent this tragedy at an early stage of the disease, but once definite symptoms set in they are very difficult indeed to treat.

Neuritis also may be very troublesome, and sometimes local irritation is so extreme that the patient's life is rendered miserable. General weakness and severe local cramp-like pains may also add greatly to the patient's discomfort. Though this type of persistent glycosuria may give rise to little or no trouble, it is impossible to foresee what is likely to happen in any particular individual, and the condition should be controlled if possible. In general, it is

most important to make certain that the case is really one of diabetes, or very marked glycosuria with a high blood-sugar content, before giving insulin. If the patient's urine does not give an acetone reaction great care must be exercised, and the possibility of the case being one of renal glycosuria must never be overlooked. In this condition it may be very dangerous indeed to treat a patient with insulin, since the blood-sugar may be already somewhat low. Renal glycosuria can be easily excluded by a sugar-tolerance test carried out in the usual way, but it is more simple to give the patient a dose of 50 g. or so of glucose dissolved in a little water, and to get him to empty his bladder from two and a half to three hours after the ingestion of the glucose. This sample of urine will contain glucose, but a specimen passed after this time should not show glycosuria. Instead of taking glucose, an ordinary meal fairly rich in starchy material may be eaten, and the urine tested, after an interval, in the same way as with glucose. If sugar is not being passed in the urine two and a half to three hours after a glucose or starch meal, the individual is not a suitable patient for insulin, and the condition is probably one of renal glycosuria. As a rule, a patient requiring insulin passes large amounts of acetone and diacetic acid in the urine, but this is not always the case. In this connexion it may be noted that ketone bodies may be present in the urine of any patient, no matter what disease he suffers from, if his diet has been recently changed to one containing much protein and fat with very little carbohydrate. If any real difficulty arises as to the suitability of the patient a blood-sugar estimation will frequently help to settle the matter, for the exact state of matters will then be more or less obvious. Always inquire carefully into the history of the patient, and ascertain whether he has lost weight recently. If he has not been dieted before, and is found to be suffering from diabetes, try the effect of diet before giving insulin. Frequently diet will control the condition and insulin may not be necessary. In young people, however, in whom the disease is often more or less acute and well established, it is perhaps advisable to give insulin in all cases, for this gives the best chance for recovery of the diseased pancreatic cells. Occasionally one sees a patient in whom the diabetic condition appears to be very severe but whose response to diet is extraordinarily good. Here insulin is not indicated. If the above directions are observed, there should be no great difficulty in so arranging that only suitable patients should receive insulin.

Blood-sugar in Insulin Treatment.

It is now generally accepted that insulin does not cure diabetes. While insulin is being administered the symptoms disappear, and the patient regains health and strength, but on stopping the insulin the symptoms return. In the ordinary dietetic treatment of diabetes on the principles suggested by Allen the chief points aimed at were to keep the urine free from sugar and to maintain the blood-sugar as near the normal level as possible. The importance of keeping down the blood-sugar lay in the fact that the damaged pancreatic cells had a better chance to recover when there was not an excessive amount of sugar in the blood. Unfortunately, we had little clinical evidence in the past that the diseased pancreatic cells in severe diabetes ever recovered to any appreciable extent, however carefully dietetic rules were observed. To everyone who has had much experience of diabetes it is but too obvious that the more severe types are essentially progressive in nature, and the modern dietetic treatment, so largely used before the advent of insulin, never succeeded in doing more than postponing the fatal issue in such cases. No doubt, the best chance for the damaged pancreatic tissue to recover its efficiency is afforded when the blood-sugar is kept as nearly normal as possible, and in all methods of treatment this is the ideal to be aimed at. In the past, however, we must confess that the results obtained with diet do not give us great reason for hope that insulin will ever cure diabetes. True, in some instances, when diet was the sole means at our disposal, it was impossible to keep the patient's blood-sugar normal, so that there was no real chance given for recovery, but many diabetic patients, on the other hand, went on for a comparatively long time with normal blood-sugars while taking a diet that was amply sufficient for all their requirements. In spite of this, the symptoms reappeared sooner or later, glycosuria returned, the blood-sugar became impossible to control, and death supervened.

Details of Treatment with Insulin.

Having ascertained that the particular patient to be treated is a suitable case for insulin, the next point is to arrange a diet and to give the patient the necessary amount of insulin to keep his urine sugar-free and, if possible, to keep his blood-sugar within normal limits. Frequently this is easy; at other times it is difficult, and sometimes it is practically impossible. In very severe cases of diabetes it is occasionally found that the amount of insulin necessary to keep the patient sugar-free, when even a minimum diet is prescribed, is very large and quite beyond the financial means of the patient. In such cases the patient, even when passing considerable amounts of sugar, does quite well as a rule as long as insulin is being administered. Here the practical aspect of the question has to be separated from purely theoretical considerations, and, in my opinion, it is better to give the patient a moderately good diet with the maximum amount of insulin, even when such diet produces glycosuria, rather than keep him on a starvation diet on which the glycosuria may be much less or even occasionally absent. In very bad cases of this nature experience over long periods goes to show that increased tolerance for carbohydrate is not likely to result, and it is therefore best to let the patient go on in comparative comfort, rather than subject him indefinitely to conditions of severity amounting almost to torment, without any reasonable chance of deriving benefit from them.

Diets are sometimes given consisting of large amounts of one or two substances, such as fat and vegetables for instance, so that, as far as food is concerned, the last state of the unhappy patient is worse than the first. For short periods such diets may be satisfactory and help materially in eliminating glycosuria, though marked ketosis may be present, but, on the whole, they are quite unnecessary and possess the drawback that patients will not carry on with them for any length of time. Now, in order that the best effects should be obtained, it is essential that the diet and dose of insulin should be carefully correlated, and the best means of bringing this happy combination about is the problem that confronts us in every case we treat. Several different methods have been suggested, but, in my experience, the simplest and most satisfactory in the end is for the medical man to put his patient on to a fixed diet which he calculates will be sufficient for his wants, and then to give increasing doses of insulin until satisfactory results are obtained. This daily dietetic allowance should contain from 10 to 15 calories for every pound the patient weighs. The exact quantity given will naturally depend on various circumstances such as the amount of work the patient is performing and other factors. The protein allowance should be in the neighbourhood of half a gramme or less per pound weight of the patient, while the carbohydrate should be small and the fat content comparatively high. Roughly speaking, the carbohydrate content should not exceed about one-third of the weight of the fat given. Thus, in a patient weighing from 120 to 130 lb., a suitable diet would consist of about 65 to 70 g. of protein with 40 to 50 g. of carbohydrate and 140 to 150 g. of fat, giving a total calorific value of about 1700 to 1800. Sometimes, of course, it will be found that considerable modification of such a diet may be necessary, but it is quite impossible to say

how the patient will respond until treatment with insulin is actually carried out.

For making up a diet the following tables may be used. It is advisable in each case to include some green vegetables in the daily menu, though large amounts of these are frequently quite unnecessary. The following vegetables, referred to later as "Group A," may be used either singly or in any combination. Of these, each ounce contains 1 g. carbohydrate.

GROUP A.—VEGETABLES.
(1 oz. = 1 g. carbohydrate.)

Cabbage.	Cauliflower.	Brussels sprouts.	Lettuce.
Spinach.	Cucumber.	Asparagus.	Marrow.
Rhubarb.	Celery.	Mushrooms.	Tomatoes.
Seakale.	Radishes.	Watercress.	Leeks.
Grape fruit.	Endive.	French beans.	

The following table shows the approximate content in grammes of protein, fat, and carbohydrate in 1 oz. of foods. It contains practically all the foodstuffs necessary for the treatment of diabetic cases.

Table of Food Values.

—	Carbohydrate.	Protein.	Fat.	Calories.
Almonds	4	5	14	168
Bread (brown)	13	1·2	0	65
,, (white)	15	2	0	75
Brazil nuts	2	5	19	204
Butter	0	0	23	212
Broth	0	1	0	5
Bacon	0	3	18	180
Cream (thin)	1	1	6	65
,, (thick)	1	1	20	90
Chicken	0	6	1	34
Cheese	0	8	10	130
One egg	0	6	6	80
Fish (white)	0	5	0	20
Meat (lean)	0	6	3	51
Milk	1·5	1	1	19
Margarine	0	0	23	212
Oatmeal	18	4	2	112
Potatoes	6	0·5	0	30
Shredded wheat	21	3	0	103
Three oysters	2	3	0	25

The following is an example of a diet which I frequently use :—

Diet for Patient Weighing about 140 lb.

	Carbohydrate.	Fat.	Protein.	Calories.
Breakfast, 9.30 A.M.				
2 oz. bacon 1 egg 1 oz. white bread ½ oz. butter ½ oz. cream 4 oz. vegetables (Group A)	20	63	15	733
Lunch, 1 P.M.				
Beef tea 4 oz. white fish ½ oz. Callard's starch-free bread ½ oz. butter ½ oz. cheese 1 oz. cream 2 oz. vegetables	3	22	35	350
Tea, 4 P.M.				
Tea ½ oz. thin cream 1 Kalari or bran biscuit (Callard) ½ oz. butter	—	15	7	160
Dinner, 6.30 P.M.				
Clear soup 4 oz. meat 1 oz. bread ½ oz. cream ½ oz. cheese ½ oz. butter 4 oz. vegetables Coffee	25	40	30	590
	48	140	87	1833

Having put the patient on a definite diet, it is best to keep him in bed for a few days at the beginning of treatment, or at any rate, he should remain indoors. His urine is collected and examined each day for sugar and ketone bodies, a quantitative estimation of the sugar being carried out if possible. He is warned to be on the lookout for any indications of hypoglycæmia, and told to take some barley-sugar if symptoms should come on. A supply of barley-sugar should always be kept in his immediate vicinity so that it may be available at any moment. Injections of insulin are then begun, and with the patient taking the same diet day after day, the amount of insulin is slowly increased until the urine becomes free from sugar, or until the dose given is a comparatively large one. On the whole, it is safer not to give more than 50 units of insulin per day as a maximum, and, if possible, a smaller dose should be employed. The principle of the treatment is to begin with small doses, and to increase the amount gradually until the glycosuria disappears, or until a dose is reached beyond which the medical attendant does not wish to go. This ensures that if symptoms do supervene, they are never severe, for under these conditions it is obviously impossible to give a dose at any one time that is much in excess of the patient's requirements. The insulin is given twice a day by injection, about 30 minutes before the morning and evening meals. Sometimes more frequent injections are done, but, generally speaking, this is inconvenient for all concerned. In bad cases it is generally quite safe to start with 10 units twice a day, but to be on the safe side, 5 units had better be used to begin with unless it is quite certain that the patient is really suffering from a severe condition. As long as glycosuria persists, gradually increasing doses as indicated below may be given.

Insulin Dose in Units.

Day.	Morning.	Evening.	Day.	Morning.	Evening.
1st	5	5	11th	15	15
2nd	5	5	12th	15	15
3rd	10	5	13th	20	15
4th	10	5	14th	20	20
5th	10	10	15th	20	20
6th	10	10	16th	25	20
7th	10	10	17th	25	20
8th	15	10	18th	25	25
9th	15	10	19th	30	25
10th	15	15	20th	30	30

If, after 30 units are given twice daily for a few days, glycosuria still persists, it is best to continue for a little time with this dose, and to cut down gradually the carbohydrate of the diet. In some severe cases it may be necessary to eliminate carbohydrate altogether, but in others a partial reduction will frequently result in stopping the glycosuria, and when this happens the dose of insulin may be very gradually reduced, or a little more carbohydrate may be cautiously added to the diet. By one means or another it will generally be found possible to keep a patient free from glycosuria and marked ketosis, and yet prevent the onset of symptoms. If, however, hypoglycæmic symptoms should supervene they are always mild, since it is impossible if this method is followed to give anything beyond a very slight excess of insulin in the case of any particular patient. Indeed, the onset of slight hypoglycæmic phenomena is often helpful in treatment, as an indication that the insulin dose should be very slightly reduced or the carbohydrate of the diet slightly increased. The majority of my patients remain in good health and without glycosuria on a dose of from 10 to 25 units of insulin twice a day; for various reasons it is preferable not to increase this dose too much, though sometimes it may be necessary to do so. Frequently, however, the urine becomes sugar-free long before a large dose is reached. When this happens it is best to continue with the dose of insulin that was being used when the glycosuria disappeared or to reduce this dose to a very slight extent. If sugar now appears in the urine it is obvious that the amount of insulin given is just on the low side, and a slight increase should be made. It is all a matter of common sense in adjusting diet and insulin, and obviously,

when there is any tendency to hypoglycæmic symptoms, they can be removed either by reducing the amount of insulin or by increasing the carbohydrate of the diet. The one important point is not to hurry too much at the beginning of treatment, but to give progressively increasing doses of insulin spread over a fairly long period. When this is done, and the above general directions are followed, there is no danger in the use of the remedy. In certain circumstances blood-sugar estimations are useful, but it is quite possible to treat a case quite successfully without a single blood-sugar estimation. When, during treatment, the total sugar in the urine begins to decrease very appreciably, and only a small amount is present, it is best to get the patient to pass urine before each injection and to examine this specimen for sugar before giving the insulin. If at any time such a specimen of urine is found to be sugar-free, it is advisable to feel one's way carefully, so to speak, and to give a slightly smaller dose of insulin for a few times afterwards. If no symptoms appear the dose may be cautiously increased over and above the amount just necessary to keep the urine sugar-free. This will ensure that the blood-sugar is reduced nearer to the normal level. Various modifications of the above scheme may be used, but the principle on which it is based should be followed, as this gives the best protection against untoward results.

Insulin in Diabetic Coma.

In coma large doses of insulin may be given. Treatment should be begun with an injection of 20 to 25 units followed by a similar amount in two hours or less if no definite improvement takes place. In this condition blood-sugar estimations are of great value in indicating the effect of the insulin. Sugar ought not to be given along with insulin, for though this does no harm in certain cases, I have seen one patient in whom it seemed to neutralise the action of insulin. Generally, in cases of diabetic coma, insulin acts in a dramatic manner, but we cannot always be certain of success even when insulin is employed. On the whole, there does not appear to be any reason why insulin should not be successfully used in general practice.

Clinical and Laboratory Notes.

TRAUMATIC RUPTURE OF A HYDRONEPHROSIS.

BY JAS. B. MACALPINE, F.R.C.S. ENG.,

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IN THE LANCET of August 4th, 1923, Mr. H. W. L. Molesworth records a case of traumatic rupture of a hydronephrosis, which had occurred in his practice; he also supplied notes of 11 previously reported cases, which, with two exceptions emanating from America, were all reported in continental journals; he says that he knows of no English case or specimen which illustrates this rare accident. In view of this statement, the following report may be of interest:—

J. H., male aged 7, was admitted to my service at the Salford Royal Hospital on July 27th, 1920. The previous evening he had been jumping over a gate, when he fell and injured his left side just below the costal margin. During the night he vomited several times, and again on the day of admission to the hospital. The pain in his side had prevented sleep during the night. A doctor saw him on the 27th, about 2 P.M., and sent him into hospital. On admission the pulse was 140, temperature 99° F. The complexion was rosy and tongue clean and moist; the bowels had not acted for a period of two days; the abdomen was slightly distended and some rigidity of the muscles of the left side of the abdominal wall was observed. This was not marked and could be overcome if his attention was distracted; there was tenderness in the same region. On percussion dullness was found in the left flank, which persisted when his position was changed. The urine contained no trace of blood. My colleague, Mr. G. Jefferson, F.R.C.S., kindly undertook the operation in my absence.

Operation.—Laparotomy, through the left rectus incision; the stomach, intestines, and spleen were all found to be normal; there was no blood in the peritoneal cavity. On the left side the descending colon was set up on a ridge, and there was some free fluid (? urine) present in this region. The wound was closed. The patient was turned over on his side, and approach obtained to the left kidney through an oblique lumbar incision. On cutting through the perinephritic fascia urine escaped to the extent of about half a pint; all the tissues in the neighbourhood of the kidney were saturated with this fluid. When the kidney was lifted into the wound, it was seen that a condition of hydronephrosis existed, and that there was a tear on the posterior aspect of the pelvis about two and a half inches in length. Investigation of the cause of the hydronephrosis was difficult owing to the presence of the urinary œdema in the perinephric tissues. The kidney was removed and a drainage-tube inserted.

On the 28th he was much better, though the pulse was still 136 and there was some difficulty in respiration. During the next few days the patient suffered from consolidation of both bases. He was examined at my request by Dr. G. J. Langley, in whose opinion the pneumonia was a post-anæsthetic condition rather than one due to irritation spreading through the diaphragm. (It was found that he had suffered from pneumonia in 1916, and that he had always had a cough since then.) On inquiry as to his previous urinary history, we learned that the patient has suffered from a severe degree of nocturnal enuresis, the bed being wet each night during his sleep. He had also been sent home from school frequently, because his clothes had been wet. No other history of urinary trouble was obtainable. He had never complained of any pain in his loin. He made a complete recovery and left the hospital in three weeks.

I have recently attempted to communicate with his parents to find out if the enuresis had been affected by the removal of the kidney, but have been unable to trace the patient.

A CONGENITAL TUMOUR OF THE TIBIA.

BY D. DENHAM PINNOCK, F.R.C.S. ENG.,

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THE following case appears to be a very rare type of congenital tumour in a bone.

A female child, 2 weeks old, was brought to the out-patient department of the Victoria Hospital, the mother having noticed a swelling on the lower part of the left leg, which she said had been present since birth.

Condition on Examination.—A smooth swelling was detected in the lower part of the left tibia, one and a half inches above the ankle, continuous with the bone. There was no redness or œdema, and the skin moved freely over the swelling. No history of trauma was obtained; the confinement had been normal, and there were no other tumours about the child, who appeared quite healthy. The Wassermann reaction was negative. X ray examination showed an intramedullary tumour in the lower fourth of the bone, causing some expansion of the bone with thinning of the shaft, and there appeared to be a certain amount of cystic change, the picture being that of a myeloma.

Operation.—On exposure of the tumour it was noted that there was none of the usual maroon colour of a myeloma to be seen. The periosteum was intact over it, but the bone was so very thinned that it could be cut with a knife, and this showed a solid tumour filling and expanding the shaft of the tibia. It was firm, white, fibrous, and striated on section, and had the appearance of a fibro-sarcoma. As the diagnosis was not certain, it was decided to remove the growth by performing a partial diaphysectomy, which was done; the specimen was sent for pathological investigation, and the report stated that the growth was a pure fibroma, showing no evidence of malignancy.

The X ray was misleading, as the tumour definitely appeared to be cystic, whereas it was a solid mass. The child is now over a year old and has developed well. Bone has been thrown out under the periosteum, but there is a gap not yet filled just about the site of the tumour, which it is hoped will be repaired completely by a bone graft. The innocent nature of the tumour seems established beyond doubt, as there are no signs of any recurrence either locally or in the form of secondary deposits.

Reviews and Notices of Books.

HISTORY OF THE GREAT WAR.

Medical Services: Pathology. Edited by Maj.-Gen. Sir W. G. MACPHERSON, K.C.M.G., C.B., LL.D., Maj.-Gen. Sir W. B. LEISHMAN, K.C.M.G., and Col. S. L. CUMMINS, C.B., C.M.G., LL.D. London: H.M. Stationery Office. 1923. Pp. 600. 21*s.*

THIS volume embodies in some 22 chapters the sum of medical scientific research called for and stimulated by the war. At the beginning of hostilities there was little coöperation between the pathologist, the bacteriologist, and the surgeon, and so overwhelmed were the existing methods of wound treatment by the circumstances of modern warfare that, to quote Sir Alfred Keogh, "we went straight back into all the septic infections of the Middle Ages." How the pathological service was organised to meet the new conditions is set forth in the opening chapter by Sir William Leishman. About one-third of the volume deals with surgical pathology: anaerobic and non-anaerobic infections, in particular gas gangrene and tetanus. Although on a large scale these are almost exclusively war conditions, and, we trust, past history now, the knowledge acquired from 1914 onwards forms an important chapter in medical annals. Gas gangrene and tetanus are considered fully in all their aspects. A chapter on latent sepsis by Sir Kenneth Goadby discusses the pathology of wounds which after they had healed were liable to break out whether the scars were disturbed or not. In this observer's opinion it is possible by means of vaccines to keep the micro-organisms in check during any subsequent manipulative operation.

The alarming sequelæ of wound infection in the first months of the war, in spite of antiseptic treatment, called the whole principles of antiseptic treatment into question, with the result that attention was directed to the rôle played by the body tissues in combating pathogenic organisms. This new point of view is very fully expounded by Sir Almroth Wright under the title of "The Physiology of Wounds." His theories are based both on experiment and on observations made in the various zones of fighting where different conditions of surgical organisation held. He shows by experiment that the disintegrating leucocyte, by setting free trypsin, overcomes the antitryptic ("phylactic") power of the normal blood serum. In blood fluids deprived of this power ("ecphylactic") serophytic microbes can grow and multiply. By producing "kataphylaxis," whereby antitryptic serum, perpetually renewed, is transported to the foci of bacterial growth, the "ecphylactic" conditions there established are little by little abolished and the microbic growth arrested. The method of inducing "kataphylaxis" is the application of a 2½–5 per cent. solution of sodium chloride. The importance of early and careful recision and cleansing of the wound as opposed to the application of antiseptics was demonstrated by the fact that as soon as surgical hospitals were established behind the firing line and emphasis was laid on this treatment, putrid infections became rare.

The statistics of tetanus show how the mortality from this disease fell from 63·5 per cent. for the 1914 period to 37·9 per cent. in the 1916–19 period. In France and Belgium the total incidence works out at 2529 cases. The essential causal factor was proved to be the presence of tetanus spores in the soil of the battle area; outside French and Belgian territory in 1914–18 the incidence was negligible. The value of antitetanic serum in prophylaxis has now been established beyond all doubt.

The record of medicine in the war is a proud one, and perhaps the greatest of her triumphs has lain in controlling the scourge of typhoid. "Enteric fever during the war," says Sir William Leishman, "might well have been the subject of the blackest chapter in medical history." But effective measures of hygiene and prophylaxis by inoculation are a milestone in medical progress. A comparison of the annual incidence during the Great War, 2·35 per 1000, with that during the South African war, 105·00 per 1000, serves as a fitting illustration. A point of considerable scientific interest is brought forward in considering the possible protective action of typhoid vaccine against paratyphoid fevers. Statistical evidence would seem to support such protective action.

The pathology of dysentery is treated by Mr. Clifford Dobell and Colonel W. Harvey. Experience in all areas brought out the importance of accurate diagnosis from other forms of diarrhœa and enteritis, with a view to efficient treatment. Colonel J. G. Adami contributes a detailed and well-illustrated study of influenza. He summarises his data and results very concisely in three paragraphs. On the pathology of tuberculosis it is interesting to learn that the mortality rate was higher amongst men of the Labour Corps of the various countries. The statistics illustrate in a striking manner that the incidence of the disease is lower amongst the more urban and highest amongst the more isolated and scattered peoples. Chapters on Trench Fever, Spirochætal Jaundice, Acute Infective Polyneuritis, Gingivitis and Vincent's Angina, War Nephritis, and Encephalitis Lethargica complete the pathological survey. A section is also included dealing with the War Office Collection of Pathological Specimens.

A feature of several sections is the concise summary of new data. The work is fully annotated, and this, together with a complete and carefully compiled index, makes the volume one of high value to the pathologist and to the student of medical history.

Hygiene of the War. Edited by Maj.-Gen. Sir W. G. MACPHERSON, Col. Sir W. H. HORROCKS, and Maj.-Gen. W. O. BEVERIDGE. H.M. Stationery Office. 1923. In two volumes. Pp. 400 and 506. 21*s.* each.

IN these two volumes General Macpherson and his colleagues give a complete record of the sanitary achievements of the war, of the difficulties and the dexterous methods employed to meet them. In former campaigns statistics show the balance of deaths from sickness to have been far in excess of those due to casualties. Although the increasing power of modern agents of destruction has disturbed this balance, at the beginning of the recent war disease still constituted the greatest menace to armies in the field. Moreover, as the unprecedented numbers of the troops engaged on active service greatly increased the danger, it was early recognised, in particular on the Eastern front, but hardly less on the Western, that the key to success was sanitation.

The truest estimate of the value of sanitation is given by the percentage of the permissible limit of inefficiency due to sickness in the field. This figure had been established before the war as 0·3 per cent. Any admission rate exceeding this was a danger-signal and indicated the presence of some preventable cause of disease or the onset of an epidemic. This indicator proved extremely sensitive in recording the sanitary condition of units in the field, and it is a great tribute to the thoroughness with which sanitation was carried out that the percentage for sickness, at any rate in France and Belgium, rarely reached the permissible limit. Stress is laid both in the editors' preface and throughout the volumes on the influence of the individual in maintaining the high standard of health and resulting high efficiency in the British troops. The sanitary condition of a unit is a good index of its discipline, and it was the well disciplined units in France that turned over their areas to reliefs in good sanitary order. The interest of all ranks in the paramount importance of

hygiene was roused by the efforts of the numerous schools of sanitation at home and in the various theatres of war; and regulations constantly emphasised the responsibility of all units and ranks, under their respective commanding officers, with regard to measures of hygiene. Each man received definite instruction in the general principles of public health; the relation of disease to dirt, flies, and lice were kept constantly before his eyes by means of posters and pamphlets. The "sanitary conscience" which developed as a consequence became the prime factor in the prevention of wastage and in maintaining efficiency in the troops.

Major S. H. Daukes contributes a chapter on the growth and work of the schools of instruction in hygiene. This section is copiously illustrated with half-tone blocks which give a fair impression of the general appearance of essentially "home-made" field sanitary equipment, but a few more diagrammatic details might have been added with advantage. The main scope of hygiene may be summed up under four headings: water-supply, food, disposal of waste, and prevention of disease. Of these the water-supply presented by far the greatest problem, and almost half of the first volume deals with this alone. When one considers the world-wide extent of the war, and the varying geographical and climatic features of the different theatres, from the Arctic to the Tropics, the complexity of the problem is evident. The various methods of water purification are detailed at length in an appendix, with plans of the apparatus employed. The maps illustrating methods of water distribution in the East—a romance of science in itself—are on the whole poor and somewhat confusing.

The subject of rations forms one of the most interesting sections of the work. It is said, and truly, that an army fights on its stomach. So varied in requirements were the stomachs to be fed in the British troops that the task of rationing became an involved one. To take the case in East Africa, there was the problem of feeding not only the European, the Indian, and the African, but of catering for the peculiar dietaries of half-a-dozen African races, and now and again for imported labourers wholly unused to African conditions. The various dietaries employed for different races in different climes are accurately detailed, including those for prisoners of war. The economy of foodstuffs, and the increased efficiency brought about by scientific feeding and clothing, are well illustrated by the experiments carried out by Lieut.-Colonel E. P. Cathcart and Captain J. B. Orr.

More than half of Volume II. deals with the prevention of specific diseases. One section records the work done in drainage as a preventive measure in malaria, and embodies many photographs and maps. A long and detailed chapter on the prevention of infestation by lice is contributed by Colonel Sir W. H. Horrocks. Prior to 1914 it was known that lice were the vectors of typhus and relapsing fever, and during the war British and American investigators proved them to be carriers of trench fever also. In spite of all efforts to maintain personal cleanliness, lousiness constituted one of the minor horrors of the trenches. How difficult the louse was to eradicate is shown by the fact that even in the latter part of 1915 it was not uncommon to find 95 per cent. of the troops verminous after a 12 days' sojourn in the trenches.

The two volumes on Hygiene constitute a full and easily accessible record of the experience of the war. Much of the information gained is applicable only to war conditions, but the achievements with regard to water-supply and purification, the economy resulting from the increased knowledge of food values, and the control of disease by efficient sanitation, mark an advance in the civilisation of the world. Most of all one feels in reading these volumes that the awakening of the "sanitary conscience" in all who served in the forces will prove a lasting benefit to the whole human race.

Diseases of the War. Vol. II. Edited by Maj.-Gen. Sir W. G. MACPHERSON, Maj.-Gen. Sir W. P. HERRINGHAM, K.C.M.G., C.B., Col. T. R. ELLIOTT, C.B.E., D.S.O., Lt.-Col. A. BALFOUR, C.B., C.M.G. H.M. Stationery Office. 1923. Pp. 605. 25*s.*

THE second volume embodies, with the exception of three chapters, the conditions consequent on methods of warfare employed for the first time in the various fields. The major portion of the book deals with gas poisoning. The development of gas warfare, the different types of gas used, and the protective measures taken are fully considered in all their aspects. The bibliography appended to the various sections allows an estimate to be made of the work done on this subject both by the Allies and by the Central European Powers.

The results achieved in the prevention and treatment of venereal disease in the Forces during the war, and for some time subsequent to the armistice, are described by Col. L. W. Harrison. This chapter reviews all the important advances in treatment that have been made in recent years. Emphasis is laid on the preventive work done by the N.C.C.V.D. and other bodies. A consideration of the medical aspects of aviation shows that while the application of certain scientific tests to prospective air pilots was instrumental in weeding out numbers who would have proved, on the basis of past experience, unfit for war service in the air, the true criterion of fitness was the soundness of the candidate's stock, his aptitude for and prowess in games involving rapid coördination of hand and eye, and his powers of decision and judgment.

The ætiology, symptoms, and diagnosis of war neuroses and psychoneuroses (so-called "shell-shock") form an important section of the volume. Complete data of the results of treatment are not available, but in regard to the psychoneuroses the author states that "the general opinion of those who served in France was that the percentage of relapses in cases treated early and efficiently was small."

Official History of Australia in the War of 1914–1918. Vol. VII. *Sinai and Palestine.* By H. S. GULLETT. Pp. 844. 28*s.* Vol. VIII. *The Australian Flying Corps, 1914–1918.* By F. M. CUTLACK. Pp. 485. 24*s.* Sydney: Angus and Robertson. 1923.

THE purpose of this volume, says Mr. Gullett in his preface to Vol. VII., "is to record the work of the Australian Light Horse in the British campaigns in Sinai, Palestine, and Syria during the years 1916, 1917, and 1918. It is in no sense a complete narrative of those campaigns." But as he says further on, "the story in its bolder features covers the whole British force." Anyway, Mr. Gullett has succeeded in putting upon paper an account of the operations which gives the non-professional reader a life-like picture of the campaigns, of which the most striking feature, perhaps, is the heroic way in which both horses and men stood out against thirst and fatigue. The arrangements for the water-supply, which gradually got better and better, make most interesting reading. As to medical matters headquarters' handling of the transport of wounded seems to have left much to be desired. On the other side it is pleasing to note that the Turks scrupulously respected the Red Cross, and that a few days before Romani was fought a German airman dropped a message asking the Australians to mark their ambulances clearly so that they should not be bombed. This was done and subsequent bombers carefully avoided the ambulances. But the whole book is well worth reading as a record of work for the Empire which few of us have appreciated at its full value.

In Vol. VIII. the war history of the Australian Flying Corps has been mainly written from the official diaries of the four Australian flying squadrons now in the archives of the Australian War Museum, but the narrative has been largely supplemented from other sources, notably from notes written by Captain T. W. White, Lieut.-Colonel W. O. Watt, and many

other officers whose names are duly acknowledged by the author. Both little air raids and the last great air battles are described, and we get a very vivid picture of what warfare in the air means, and how extraordinary are the calls which those who served in the air forces have to meet upon their courage and their resource. An interesting chapter at the end of the volume gives the story of the flights or attempted flights home to Australia undertaken by some Australian airmen.

A TEXT-BOOK OF MIDWIFERY.

For Students and Practitioners. Fourth edition. By R. W. JOHNSTONE, C.B.E., M.A., M.D., F.R.C.S.E., Lecturer on Midwifery and Gynæcology in the School of Medicine of the Royal Colleges of Edinburgh. Edinburgh: A. and C. Black, Ltd. 1923. With 263 illustrations. Pp. 508. 15*s*.

IN the fourth edition of this book a complete revision has been carried out. In the sections dealing with venereal disease the author has had the assistance of Mr. David Lees and the paragraphs on antenatal supervision have been contributed by Dr. F. J. Browne. The book is one of a handy size in which the subject is fully considered, and it is illustrated by a number of excellent drawings. It forms a good summary of the main principles of obstetric medicine as they are taught in the Edinburgh School. In discussing the structure of the corpus luteum the author inclines to the view that the cells are derived from the theca interna, but does not mention the modern theory that in reality there are two types of cells included in this structure, the one derived from the theca and the other from the granulosa cells; but, as he rightly points out, such a controversial subject can hardly be fully discussed in a text-book of this character. The account of the development of the placenta is excellent and well illustrated. An interesting description is given of twilight sleep which the author regards in certain conditions as a safe and certain method of producing amnesia with no undue risk to either the mother or the child. In view of Dr. Johnstone's practical experience his conclusions are of considerable value on this subject. The chapter dealing with the toxæmias of pregnancy, and especially the section on eclampsia, are very good and will repay reading. The author gives preference to the policy of elimination and non-interference, and in this he would have the approval of the great majority of obstetricians of experience at the present day. It is interesting to find practically no support for the practice of performing Cæsarean section in these cases. As might be expected, there is a good account of the advantages of Milne Murray's axis-traction forceps, of the instrument itself, and the best method of using it, with a number of clear illustrations. There is also a valuable table showing the advantages and disadvantages respectively of axis-traction forceps and version.

This edition can be recommended to students and practitioners as a clear and well-written guide to the practice of midwifery.

A TEXT-BOOK OF DENTAL ANATOMY AND PHYSIOLOGY.

By J. HUMPHREYS, M.D.S., F.S.A., F.L.S., and A. W. WELLINGS, M.D.S., L.D.S. London: E. Arnold and Co. 1923. Pp. 323. 16*s*.

IN the preface to this book the authors tell us that it has been written specially for the dental student. In this respect it differs from the majority of other books on this subject, which are written for the student of zoology also. Since the requirements of the former are less extensive, especially in comparative dental anatomy, there would seem to be room for such a book as this, which does not go beyond the curricula of the examining bodies in dentistry. Compared with Tomes's "Dental Anatomy," practically the only other book on this subject available for the student in this country, it is only about half the size. When one reflects that Tomes's book, for all its length, does not pretend to be an exhaustive treatise on the subject, it is obvious that the authors of this book have practised a severe compression. Indeed, we are not certain that the book is full enough even for the dental student, and we believe that the authors could have done more justice both to themselves and to their subject had the book been extended by another 50 pages. The introductory chapter to the section on comparative dental anatomy could have been lengthened with advantage.

Since comparative dental anatomy and physiology make up the expression of the principles of evolution applied to the teeth, it is necessary that the student should have a good grounding in these principles, otherwise the significance of the various changes which have occurred in the teeth and jaws will become meaningless. The student of zoology will naturally possess such knowledge before he studies comparative dental anatomy, but the dental student in most cases will make his first serious acquaintance with evolution when he commences his study of dental anatomy. For that reason we should have been glad to have seen a fuller account of Darwin's work and its later developments. The sections on the macroscopic and microscopic anatomy of the human teeth are brief, but adequate. They are not entirely free from errors. Thus the statement that the presence of the sheath of Hertwig has not been demonstrated in human teeth (p. 65) is corrected later on by an account of H. Mummery's work, which is, indeed, noted on p. 84. We regret that the authors have not included some account of L. Bolk's work on the development of the teeth. Surely the time has arrived when a frankly elementary text-book on dental anatomy should make some reference to these striking investigations. The illustrations are numerous and usually good, though some of the drawings of human teeth do not appear to be anatomically correct. The photo-micrographs are excellent, and those of Nasmyth's membrane are among the best we have ever seen.

We commend this book as a useful addition to the literature on dental anatomy.

MAN; WHAT? WHENCE? WHITHER?

By R. C. T. EVANS, M.B., B.S., M.R.C.S., L.R.C.P., D.P.H., B.Sc., F.C.S., Captain R.A.M.C. (ret.). London: Simpkin, Marshall and Co.; Chatham: Barrett and Neves, Ltd. 1922. Pp. 146. 2*s*.

EVERY thinking man has at one time or another asked himself the question of the origin of the human race and its destination. Has man arisen by the fortuitous interplay of chemical and physical forces? Is he a mere accidental product of the material world? or is he the result of the working of a superhuman intelligence?

Dr. Evans has himself felt the need for an answer to these important questions, and he has written this book in the hope that the arguments and facts which have served but to strengthen his faith may prove of equal service to others. He holds that there is indisputable evidence that there has been an evolution from the very beginning of life in this world, that this evolution has led to the formation of the highest forms of animal life, and that man himself has been derived by a slow advance from lower forms. He points out that the appearance of a mind has been a further step in the development of organic life; that consciousness is not merely an epiphenomenon, but that it is the result of an essential advance in evolution. He discusses the question of free will, and advances his reasons for thinking that its existence has resulted in the development of a class of beings who in course of time may learn always to choose the right course and reject the wrong. He deals with the question of the origin of suffering and pain, claiming that in their results they serve a valuable purpose.

The book is suggestive and will provoke thought. The questions set out in the title have been discussed with care, intelligence, and moderation.

THE LANCET.

LONDON: SATURDAY, OCTOBER 13, 1923.

THE REMUNERATION OF INSURANCE PRACTITIONERS.

THE offer of the Minister of Health in respect of the remuneration of Insurance practitioners was made in a communication to the Medical Secretary of the British Medical Association last week and appears in our columns to-day. We may assume that our readers are familiar with the offer and perhaps to such an extent with the arguments upon which it is based that little exposition is needed. These arguments are mainly statistical, paragraphs 11 to 13 of the Minister's letter giving the arithmetical justification for an offer of 8*s.* 6*d.* as the capitation fee. The Minister appeals to arithmetic in support of the usual procedure of arbitration, for more or less the mean between the opposing views of the approved societies and the panel committees, has been proposed. The 1920 award which fixed the capitation fee at 11*s.* is ignored, and the reduction of that figure two years later to 9*s.* 6*d.* is held to have inflicted no hardship upon the practitioners as shown by the fact that no resignations from the service were received on that account. We find that deduction a little specious, for surely in such circumstances only resignations en bloc can be considered as forming any practical protest. Individual members may accept a thing without liking it, and be the very persons who will resign from a service if any general movement in that direction takes place. Their inactivity does not mean acquiescence.

As was perfectly well known would be the case, the Insurance Acts Committee of the British Medical Association took little time in coming to a conclusion that the offer of the Minister of Health is unsatisfactory, and on Monday last a detailed reply to the Minister's letter was handed in. This letter will also be found in our columns, and it is such a clear and careful presentment of the reasons why the Committee cannot welcome the proposals of the Minister that any attempt to tell the message in fewer words might only obscure the points. The Committee do not consider that it is logical to compare the amount which might be paid to a general practitioner as ordinary fees by private patients with the amount which officers entrusted with the administration of medical benefit under the Insurance Acts should be paid, for the services of these officers is on a different plane, they being agents of preventive as well as of curative medicine, and members of a large scheme for the supply and collation of valuable information and for the issue of certificates. Further, the Committee challenge the statement of the Minister that the result of a capitation fee of 8*s.* 6*d.* brings the standard of living for doctors to a pre-war level, while the analogy drawn between the payment of doctors and that of the Civil Service in its higher grades is dealt with as it has been on many previous occasions. We have often pointed out that this analogy must be considered partial and misleading, if only because a doctor in general practice is on duty all day and all night and not only for certain hours, his receipts are raided by his expenses in a way which occurs to no Civil Service official, he has no pension, and no statutory holiday. The Committee, in putting forward these views, are advising the Minister of Health on the directions in which they will assist the representatives of the Panel Committees at a Conference to be held on Oct. 18th. No decision rests with the Insurance Acts Committee so that no more categorical answer than that which has been sent can be given at this stage. The views of the Committee are set out in the following recommendations:—

(*a*) That the offer of the Minister of 8*s.* for five years be definitely rejected.

(*b*) That the offer of the Minister of 8*s.* 6*d.* for three years is inadequate and that arbitration upon the lines of that of 1920 be asked for.

(*c*) That in the event of such arbitration being refused the offer of 8*s.* 6*d.* for three years be definitely rejected.

(*d*) That any agreement with the Ministry on the question of the capitation fee be subject to agreement being arrived at with regard to the special circumstances of rural practitioners.

The question whether the country is likely to get the service which has been promised to it in return for the lowest salary which arithmetic can justify is one that might well be put to the leaders of coöperative movements in any trade, in which connexion we seem to have heard such payments roundly denounced. The approved societies say that even the capitation fee of 8*s.* 6*d.* will deprive them of a surplus that they intended to use for medical purposes, a statement which does not wholly tally with the views of the Minister, who almost suggests that there will not be any surplus at all. But if these opposing views can be made to agree, and it is found that a surplus exists, who is to decide in what way it can best be used for medical benefit—the approved societies or the medical profession? In our view this is the domain of the Ministry of Health. Increased hospital accommodation, the foundation of maternity homes—to mention two obvious needs of the country—have their claims, but improved medical service and coöperation with the preventive authorities come ahead of either. Until we have good domestic medical service we do not even know where we stand in respect of hospitals. The spirit must be protested against which leads the approved societies to constitute themselves as authorities upon the best spending of money for medical benefit. The societies cannot be the predominant partner in a partnership which does not exist. Any surplus the societies may show belongs to the public, and the right place to obtain decision as to its allocation is at the Ministry of Health.

THE CASE FOR VACCINATION.

IT is difficult for a medical man to select from the mass of literature on vaccination articles, suitable for the educated layman, which set out without undue heat arguments in favour of prophylactic inoculation against small-pox and deal critically and patiently with the objections thereto. Propaganda designed to stimulate the less thoughtful section of the community is often valueless for its purpose if temperate and well-reasoned; on the other hand, when the seasoning is applied with too heavy a hand the discriminating person turns from any dish with distaste.

A masterly presentation of the case for vaccination forms the principal feature of the October issue of *The Fight Against Disease.*[1] The article is an expanded and annotated version of an address delivered to Members of Parliament in a committee room of the House of Commons on July 25th by Dr. JOHN C. MCVAIL, at the request of the Minister of Health. Dr. MCVAIL submits for consideration four propositions: (1) That small-pox is worth preventing, (2) that it can be prevented by vaccination, (3) that

[1] Published for the Research Defence Society by Macmillan and Co. 6*d.*

it cannot be prevented without vaccination, and (4) that properly conducted vaccination is very safe; each proposition is dealt with in turn. First, Dr. McVAIL distinguishes between the mild type of small-pox, such as was seen in Gloucester this summer, and the severe type. He points out that the mild type was recognised before the days of vaccination. JENNER saw it in Gloucestershire in 1789, and it prevailed elsewhere in 1806. An eighteenth century writer declared that there was one sort of small-pox a doctor could not cure, and another which a nurse could not kill. But the severe type was probably much commoner than the mild in past centuries, and was certainly so in the nineteenth century. As regards tendency to spread, mild small-pox has two qualities, which act in opposite directions. On the one hand, it is difficult to diagnose—the symptoms are often trivial and cases may be missed; on the other, the infectivity is low because the power of infection resides in the eruption, and the less the eruption, the less is the material for conveying the disease to others. The mild type reaches Britain commonly from North America, the severe type from the East, or from North Africa, often by way of the continent of Europe, and is apt to show itself first in London. Last year's outbreak at Poplar Workhouse had a heavy fatality rate, but as it occurred within a ring fence, it could be dealt with promptly, and the disease was exterminated by vaccination and isolation. A register of births and deaths, with ages and causes, at the little town of Kilmarnock, kept between the years 1728 and 1764 by an old schoolmaster, gives some indication of the ravages caused by uncontrolled severe small-pox in the days before JENNER. During this period nine epidemics took place; for most interesting statistics Dr. McVAIL'S paper must be consulted, but it is noteworthy that each new epidemic found its victims amongst that community in the children who had been born since the last outbreak, the older population having been protected by an attack during the previous epidemic. That small-pox is worth preventing is, indeed, hardly open to question. As to the future, Dr. McVAIL makes no attempt to prophesy. In England and Wales the annual notifications of small-pox fell from 289 in 1911 to 7 in 1917. Since 1917, however, the figures have mounted from 7 to 63, to 311, 280, 336, and last year to 973, while in the first half of the present year the total was 1225. No prudent man dare prophesy whether the disease in its non-fatal form will persist and breed true and remain mild, or will develop into severity and fatality. Since Dr. McVAIL'S address was delivered a report by the U.S. Public Health Service, Washington, has come to hand calling attention to increasing virulence of small-pox in the United States. In any case, precautions should be taken. The measures worth consideration are vaccination, hospital isolation, and sanitation. Dr. McVAIL does not summarise the accumulated experience of 120 years, on which faith in vaccination is based, but gives briefly the nature of the evidence on which medical confidence rests, showing that if the diminution in small-pox be considered, in places and in times, side by side with the practice of vaccination and revaccination, strong proof of causal relationship appears. The larger incidence of small-pox in countries where vaccination has been neglected, the striking immunity of revaccinated small-pox nurses, the fact that, in towns where small-pox prevails, more of the unvaccinated than of the vaccinated are attacked, especially if the vaccination is recent—these and other arguments are elaborated with convincing illustrative figures. Finally, Dr. McVAIL points out that the whole practice of vaccination is in accordance with modern scientific knowledge of the prevention of infectious diseases. JENNER believed that cow-pox was small-pox of the cow. His belief was scouted, but is now universally accepted, and vaccine lymph may consist of small-pox cultivated on the cow and turned into cow-pox.

As to alternative methods of prevention and control, hospital isolation alone would be useless, since every case sent into hospitals would be a centre of infection to nurses and attendants. Dr. McVAIL gives full recognition to the value of sanitation in respect of small-pox, but at this stage of the housing problem, at any rate, it cannot replace vaccination. The safety of properly conducted vaccination is the last proposition to be considered, and here again the writer makes no extravagant claims but almost understates the situation. Whatever the possible dangers in the past, he points out that with calf lymph there is no possibility of transmission of syphilis, because calves are not subject to that disease. As to tuberculosis, the animal from which any lymph is derived is subjected to a careful examination, the lymph being destroyed if there is the slightest cause for doubt as to its purity. The treatment of lymph in the Government Laboratories is most valuable in the elimination of pathogenic organisms. Vaccine produced in this way is as safe as science can make it. But nothing is absolutely safe; a scratch of a pin may open the door to erysipelas or lockjaw. The bite of an insect may be fatal, and the vaccine vesicle on the arm may become infected, as may any other wound. Such accidents, while extremely rare, are still deplorable, and it is difficult to see how they can be altogether avoided, though it is obviously of the utmost importance that every effort be made to prevent any kind of mismanagement of the vaccination vesicle. A paragraph on the Vaccination Acts concludes this admirable survey of vaccination. Dr. McVAIL shows no lack of sympathy with the sincere objector, nor does he advocate compulsion. He pleads only for the exercise by Parliament of some degree of pressure in support of its belief in vaccination, not by attempts at compulsion, which would do far more harm than good, but by drawing some practical distinction between a parent no doubt wrong-headed yet sincere in his conviction that vaccination is evil, and another parent who is merely indifferent or neglectful.

WATER INTOXICATION.

THE water-intake of normal man is controlled by the sensations of thirst and of satiety, and the latter, though coming less noticeably into consciousness than the former, appears to protect against too great an intake, as does the former against depletion. In addition to these psychic mechanisms of protection there are at least two others which prevent dangerous excess. The excretory power of the normal kidney has a relatively enormous range, as is illustrated by the experiment of J. G. PRIESTLEY,[1] who was able to drink 5½ litres of fluid within six hours and passed 5460 c.cm. of urine during the same period. A further protective influence in man is exerted by the stomach, which holds up any great excess of ingested water and, by causing vomiting, prevents further intake. On the pathological side an enormous capacity to drink water is exhibited by patients with diabetes insipidus, the most notable example being one recorded by TROUSSEAU,[2] in which the patient drank 40 litres of water per diem. It is well known that in these cases the urinary output is more than equal to the intake,

[1] J. G. Priestley: Jour. of Physiol., l., 304, 1916.
[2] A. Trousseau: Lectures on Clin. Med., London, 1867.

and there is probably a depletion rather than an excess of water as far as the bodily tissues are concerned. If, however, steps are taken to prevent the diuresis in these cases, serious symptoms may arise. LARSON, WEIR, and ROWNTREE have recorded [3] the occurrence of such symptoms—headache, nausea, asthenia, and incoördination of movement—in three cases of diabetes insipidus in which the diuresis had been checked by the administration of pituitary extract without the patients having diminished their water-intake. Similar effects were produced in normal dogs by the administration of pituitary extract, and, believing the results to be due to water intoxication rather than to the drug, L. G. ROWNTREE [4] has now performed an extensive series of control experiments.

Water in excessive amounts was administered through stomach-tubes to dogs, cats, and rabbits. In all these animals the symptoms produced were very striking. Retching and vomiting were followed by violent convulsions, similar to those produced by strychnine poisoning. These convulsions tended to recur at intervals of a few minutes, the animals in the interval being in a state of asthenia often bordering on coma. Death in coma, or during a convulsion, frequently occurred, but if recovery took place the animal was usually normal in a few hours after the cessation of water administration. In rabbits and guinea-pigs little actual vomiting occurred and the onset of convulsions was more rapid than in dogs, in whom there was frequent vomiting and sometimes diarrhœa. In rabbits it was possible to produce a condition of subacute intoxication by administering water in amounts equal to one-fourth of the body-weight daily over a long period. Careful post-mortem examination of these animals disclosed very little anatomical change in the tissues, the liver and kidneys showed a moist surface on section, but little cellular change could be made out on microscopic examination. Œdema could be seen in three situations, in the connective tissue of the renal cortex, in the distribution of the portal vein, and around the vessels of the brain. Careful control experiments seem to show that the symptoms could not be accounted for by the passage of the stomach-tube nor by gastric distension. The rapid absorption of digestive products or enzymes was also considered and negatived, and similar experiments on dogs with Eck's fistula led to the same effects which appears to eliminate any explanation on the grounds of hepatic œdema. It is noteworthy that the symptoms could not be reproduced either by rectal or intravenous administration, though the occurrence of hæmolysis made the latter series of experiments difficult to interpret. Actual measurement of the intracranial pressure showed that a definite rise occurs, and the intravenous administration of hypertonic salt solutions was effective in preventing the symptoms in subsequent experiments. From this ROWNTREE concludes that the main effects of water intoxication are due to the increased intracerebral pressure which occurs when the water-intake largely exceeds the output.

This striking series of observations must revive interest in the possibility that water intoxication alone may account for many of the phenomena of uræmia. Retention of urea, of uric acid, of creatinin, and of unknown toxic nitrogenous substances have successively been accused as responsible. More recently O. L. V. DE WESSELOW,[5] in this journal, has called attention to the inorganic phosphorous content of the plasma in nephritis, showing that an increased concentration of phosphates in the blood is of perhaps greater prognostic importance even than nitrogen retention. It is to be hoped that in future work ROWNTREE will be able to throw further light on the relation of water intoxication to these problems, which are of the greatest interest both to clinicians and to chemical pathologists.

[3] E. E. Larson, L. G. Rowntree, and J. F. Weir: Arch. Int. Med., 1922, xxix., 306.
[4] L. G. Rowntree: Arch. Int. Med., 1923, xxxii., 157.
[5] O. L. V. de Wesselow: THE LANCET, ccv., 163, 1923.

Annotations.

"Ne quid nimis."

A HOPEFUL OUTLOOK IN MEDICINE AND DENTISTRY.

THE opening address to students of the Royal Dental Hospital, London, was delivered on Oct. 1st by Dr. Addison, whose message was the need of preserving a sense of proportion in the medical outlook. Professional problems must be approached from a public point of view; it was essential, he said, for the doctor or dentist to see things as the ordinary man sees them. He referred to two outstanding needs of our time as, first, the need of more knowledge, and second, economy—the need of getting our money's worth. Scientific research was a paying proposition, though this was not always recognised. Money spent on research brought back huge profits, not only in the saving of life but financially as well. In speaking of the means of spreading knowledge, Dr. Addison paid a tribute to THE LANCET; it was impossible to calculate, he said, the work done by such a journal, distilling every week fresh knowledge from many sources, and keeping doctors abreast of what was being done in all parts of the world for the advancement of medical science. Dr. Addison referred to the Dentists Act of 1921 in hopeful terms, since it could not fail to raise the status of that branch of the profession of healing.

Dr. William Hunter's address to the students of Charing Cross Hospital when distributing the prizes was no less optimistic. He maintained that there was much romance to be found in our profession if the student looked out for it. The amount of knowledge which the student was required to imbibe, and periodically disgorge to the examiners, was indeed stupendous; teachers to right, left, and in front of him volleyed and thundered out knowledge, sometimes regardless of the insoluble problem of how to get a quart of fluid into a pint pot. Yet still the day contained no more than 24 hours. Fortunately, however, the student maintained a sense of humour, which even the enthusiasm of his teachers could not altogether damp; and the constant contact with human beings, and the interest of the combat with disease, made life in the medical profession one great adventure. Dr. Hunter proceeded to sketch the different eras in the advances of medical knowledge, making special reference to the importance, in medicine as well as surgery, of sepsis, and the recent beneficial results in mental disease arising from careful attention to septic foci. There should be no attempt, he said, to separate the different departments of medical research and knowledge, and the clinical aspect should have first place. The profession was a hard one, the emoluments, except to a few, and those chiefly in the surgical branch, were not great; but it carried with it a human interest which nothing else approached, a high purpose, and possibilities of adding to the happiness of millions of people.

VACCINES IN CHRONIC OSTEOMYELITIS.

IN a paper [1] read in Stockholm at the fourteenth meeting of the Nordisk Kirurgisk Forening, Prof. T. Rovsing, of Copenhagen, gave a laudatory account of the action of autogenous vaccines in cases of chronic or relapsing osteomyelitis. In the acute stage of this disease he is doubtful as to the efficacy of vaccines, but in the chronic stage they frequently act like a charm. Since 1915 he has treated 23 cases of chronic osteomyelitis with vaccines. In as many as 16 cases the infecting organism proved to be the *Staphylococcus aureus*. In four other cases the *Staphylococcus albus*, in two the typhoid bacillus, and in one the paratyphoid bacillus were found. In every

[1] Hospitalstidende, August 8th, 1923.

case there was a definite reaction to the injections, which in almost every case gave a dramatically rapid turn for the better to the course of the disease. This was often the case even when the infection had lasted for a decade or two, and had been characterised by the persistence of fistulæ or by recurrent exacerbations. The prompt and complete recoveries achieved in such cases showed vaccine therapy in marked contrast to the more primitive methods of the operating surgeon. Prof. Rovsing does not, however, underrate the ancillary services that the operating surgeon may render in such cases, and he advocates the operative removal of sequestra as a preliminary to vaccine treatment. With regard to the comparative merits of autogenous and stock vaccines, he is emphatically in favour of the former, particularly when the infecting organism belongs to that large family generically referred to as the *Staphylococcus aureus*. To hope that a stock vaccine made from one member of this group will be beneficial in a given case of *Staphylococcus aureus* infection is, in his opinion, to show a sublimely foolish belief in the patient's luck against heavy odds. But he admits there are cases in which the surgeon must suppress his contempt for the second best and give a stock vaccine. All the three cases of osteomyelitis belonging to the typhoid group responded satisfactorily to vaccine treatment, and the success in one was remarkable as the patient, aged 44, had suffered from osteomyelitis of the radius since the age of 22. Prof. Rovsing gives the name of a London surgeon who diagnosed the case as one of syphilis, with the result that, wherever the patient travelled, he was pursued by mercury, iodine, and salvarsan. These remedies did no good, and when the Wassermann reaction was found to be negative and a history was obtained of two attacks of typhoid fever, one at the age of 13 and the other at the age of 20, the typhoid character of the infection was suspected, and an autogenous vaccine, made from the typhoid bacilli found, rapidly restored the patient to complete health, which has been maintained during the six years which have since elapsed.

EVIDENCE OF PATERNITY.

SOME observations made by the bench in disposing of an affiliation order appeal at the recently held quarter sessions for the County of Devon deserve notice. Sir Francis Newbolt, K.C., the chairman, is reported in the *Times* of Oct. 6th to have said that—

> "Since the Slingsby case and a recent case in the Divorce Court, which caused a great amount of discussion, it had become known, even to the general public, that the question of paternity might often be settled by purely scientific evidence, and although that at present was beyond the means of persons generally concerned with affiliation orders, it was a matter for careful consideration whether steps should not be taken to circulate sufficient information for ordinary medical practitioners to give evidence of certain elementary indications. In the case under consideration such evidence would have been of great value."

Any comment on these remarks must be qualified by the fact that the report from which we quote is brief. In this connexion we recently referred[1] to the Slingsby legitimation action and the divorce case of Russell *v.* Russell, and in view of the learned chairman's suggestion it may be desirable to make some further allusion to the subject. If he is referring merely to the aids which an expert might give in the detection of family likeness of feature, then no doubt it is possible to summarise and classify various points in which an external similarity may manifest itself, just as a handwriting expert may draw attention to minutiæ which judge or jury can appreciate but might not readily discover for themselves. Since, however, affiliation proceedings usually take place at a time when the infant's features are as yet immature and undeveloped a note of caution may be sounded. In the Slingsby case the boy was several years of age; his features had attained a certain fixity which facilitated the detection of resemblances, and there is no doubt that Sir Bargrave Deane, who tried the case, must have derived much advantage from the expert knowledge of the great sculptor Sir George Frampton, whose assistance was invoked. In the Russell case the baby was of more tender age, and Mr. Justice Hill was careful to warn the jury against giving too much weight to the element of physical resemblance. If, on the other hand, Sir Francis Newbolt's "elementary indications" are a reference to the scientific investigation of blood-groups, to which attention was drawn in these columns in 1922,[2] it is again necessary to say that the positive results of this attractive branch of research are, for juristic purposes, scarcely complete. We repeat this note of warning, since it would be unfortunate if it were generally supposed that formulæ can be broadcasted by the aid of which the paternity of a child can be with certitude ascribed to one man or denied to another without reservations. It would be still more unfortunate if, by a misunderstanding of Sir Francis Newbolt's briefly summarised observations, an impression arose that medical witnesses were prepared to supply the necessary evidence in these cases provided that the necessary funds are forthcoming.

[1] THE LANCET, August 11th, 1923.

THE TREATMENT OF MALARIA.

AN opportune and valuable monograph[3] recently published deals with many pressing points in the treatment of malaria in the following order: (1) The value of cinchona febrifuge; (2) the relative merits of the different alkaloids of cinchona in malaria; (3) the value of some tasteless preparations of quinine; (4), (5), and (6) intramuscular, intravenous, and rectal injections of quinine; (7) the dosage of quinine; (8) the examination of the urine during quinine treatment; (9) quinine resistance. Cinchona febrifuge is as efficient, therapeutically, as is quinine in malaria, but it is much cheaper; there are many preparations of different strengths being sold under this name. The constitution of this drug should be legally defined; that made by the Government of India contains 54·65 per cent. of the crystallisable alkaloids quinine, quinidin, cinchonine, and cinchonidine. Contrary to the views of Acton, Dr. Fletcher finds that these four crystallisable alkaloids appear to be of equal value in bringing about the disappearance of malarial parasites in doses of 10 gr. given twice daily, at which strength none of them produces toxic symptoms. The alkaloid quinoidine is much more toxic and fails to destroy malaria parasites. Dr. Fletcher has done a real service in pointing out that certain tasteless preparations of quinine—i.e., quinine alkaloid and euquinine—are effacious in the cure of malaria; while, on the other hand, quinine tannate and quinine dicarbonate are quite useless. We are in entire agreement with what he has to say regarding the intramuscular injection of quinine. Serious illness and mutilation may occur as a result, and, in some cases where this has happened, the drug could have been equally well given by the mouth. When injected into the muscles quinine is not absorbed as quickly as when taken by the mouth, neither is it more potent in preventing relapses. Quinine produces immediate necrosis of the tissue into which it is injected; the dead muscle is usually absorbed in a few weeks, but may remain as a source of danger, forming an excellent medium for the growth of bacteria which may gain access either from without or from the blood-stream. These injections, then, should be reserved for patients who are dangerously ill with malaria, or for those who are comatose, or for some reason unable to swallow. In the same way the intravenous injections of quinine should be only reserved for the most

[2] THE LANCET, 1922, ii., 285.

[3] Notes on the Treatment of Malaria with the Alkaloids of Cinchona, No. 18. Studies from the Institute for Medical Research, Kuala Lumpur, Federated Malay States. By William Fletcher, M.D. Cambridge, Bacteriologist Institute for Medical Research, Kuala Lumpur. London: J. Bale, Sons, and Danielsson, Ltd. 1923. Pp. 91. 6s.

urgent cases and given by a skilled physician. As regards the rectal injections of quinine, no previous writer has ever questioned the absorption of the drug through the intestinal mucosa, but Fletcher finds quinine is too irritating for administration per rectum, and causes an actual superficial necrosis of the mucous membrane; nor was there any evidence in his series of cases that any of the drug was absorbed or appeared in the urine. Great stress is laid on the examination of the urine in all cases on quinine treatment. This should be done by means of Mayer's reagent as a routine. In this way he has shown that at least 25 per cent. of the quinine prescribed in native hospitals is not swallowed by the patients at all. He explains the discrepancy of the results obtained by various observers, as well as the so-called resistance to quinine, which was observed during the war, as being due to the non-absorption of the drug. The so-called resistance is apparent and not real, and is usually due to the quinine not being swallowed. It may be also due to the adulteration of the quinine, which takes place in India and Singapore to a very great extent. One scarcely realises here that in the East the drug is worth its weight in silver; more than once it has been found that the whole supply of the quinine mixture of a large hospital was only one-third of its prescribed strength, the drug having probably been stolen and sold elsewhere.

THE SAVILE CLUB.

THE committee of the Savile Club have published for the private use of its members a history of the club between the years 1868 and 1923, but there is, we understand, no indiscretion in making public reference to an interesting volume. The club actually reached its jubilee before the war was concluded, so that at what might have been considered the appropriate stage in its existence a summarising volume could not be issued conveniently.

A quotation from No. 34 of the *Spectator*, published on April 9th, 1711, is employed at the beginning to answer a question which is not infrequently asked, namely: What are the principal characteristics of the Savile Club? The quotation runs as follows: "The club of which I am a member is very luckily composed of such persons as are engaged in different ways of life and deputed, as it were, out of the most conspicuous classes of mankind; by this means I am furnished with the greatest variety of hints and materials, and know everything that passes in the different quarters and divisions, not only of this great city, but of the whole kingdom . . . there is no rank or degree . . . who have not their representative in this club." The principles on which the Savile was established, under the name of the New Club, were three: (1) A thorough simplicity in all arrangements; (2) the mixture of men of different professions and opinions and a careful process of election; (3) early evening meetings once or twice a week. And the close association of the club with medicine, which has always been maintained, is indicated in the earliest document in existence relating to the club. That document records an invitation from the Medical Club, at 9, Spring-gardens, London, S.W., to the Eclectic Club, suggesting the occupation of certain rooms to sub-tenants. The offer was accepted by 64 persons, who constituted the original membership of the New Club, and the pecuniary guarantors. Among these are to be found such well-known people as John Morley, Henry Sidgwick, Prof. Fleeming Jenkyn, Prof. Bonamy Price, Dr. T. Fowler, later President of Christ Church College, Oxford, W. E. Forster, the great statesman, Thomas Woolner, the sculptor, and Auberon Herbert. The direct medical connexion is indicated by the inclusion among the 64 original members of Andrew Clark, of Middlesex Hospital—a distinguished physican who suffered from bearing the same name as a better known man, Ernest Hart, and Alan Herbert, the founder of the Herbert Hospital in Paris. To Auberon Herbert, whose elder brother the fourth Lord Carnarvon was also an original member, is given the distinction of being the real founder of the New or Savile Club.

The club proved attractive to the varying order of men most indicated for membership, for the list of original elections, bringing the number up to 100, comprised Leslie Stephen, Lord Dufferin, the great ambassador; Bryce, the historian and statesman; Sant and H. W. B. Davis, typical artists of their day; Sir Samuel Baker, and Prof. R. C. Jebb. The first medical recruits were Dr. John Cavafy and Dr. P. H. Pye-Smith. In two years the club became too large for its subtenancy, while its membership was increased by such adherents as Charles Dilke, Leonard Courtney, and Mr. A. J. Balfour, and its scope enlarged by an Anglo-American movement. In 1871 a house was purchased in Savile-row, the club then adopting its present name. The influx of distinguished persons continued, as inspection of the alphabetised list of members at the end of the volume shows, and in particular the following may be mentioned: three Darwin brothers, Tyndall, Prof. Henry Jackson, Andrew Lang, Justin McCarthy, J. P. Mahaffy, Poynter, William Thomson (Lord Kelvin), Walter Besant, Robert Louis Stevenson, and Francis Balfour. The intellectual level of the club was exceedingly high, the thinking was extremely broad, and at this time a listening Savilian heard his club described as: "An awful swell club: they won't elect you unless you're an atheist or have written a book." In 1882 the pressure on the premises having again become acute, the present house in Piccadilly was bought from Lord Rosebery. Through these changes the original features of the club remained, and remain, in exposition of the club's motto—Sodalitas: Convivium. In this direction the value of the table d'hôte dinner at a moderate price was realised at the first. It was deliberately introduced by the founders of the club with the view to promoting not merely social but friendly relations between the members. No one supposed that a general dinner at a fixed time was the most convenient or most luxurious method of supplying a meal to anyone who might want it, but the table d'hôte was held to make for mutual friendship among the members which was the agreed purpose of the club. There have been times in the history of the club when the table d'hôte has come in for criticism, but no foolish reformer has here been able to make headway.

In the minds of many medical men, mention of the Savile Club calls up the most pleasant of memories. Either they are or they have been Savilians, and have made many cherished friendships within its walls. We in this office have a sad and yet sweet liaison with the club. Constantly, when a prominent member of the medical profession dies, we receive messages, for private information or for use in a biography, from correspondents whose knowledge and affectionate feelings have been based upon an intimacy gained in the Savile. The authorities of the club have done well to publish these interesting annals.

EXOPHTHALMIC GOITRE IN CHILDHOOD.

Dr. Henry Heiman,[1] of New York, who has recently observed three examples in children, aged 4, 5, and 7 years respectively, remarks that although exophthalmic goitre is rare in childhood, a large number of cases have been reported. In a series of 1512 cases of exophthalmic goitre at the Mayo Clinic there were five children, or 0·3 per cent., under 10 years of age, the youngest being 4 years old. Barret, who made the most exhaustive study of the condition in childhood in his Paris thesis of 1901, collected 39 cases in children, the youngest of whom was aged 2½ years. Sex distribution shows a definite preponderance of females, 28 of Barret's cases being girls and 11 boys. Although in Dr. Heiman's cases

[1] Amer. Jour. of Diseases of Children, September, 1923.

careful inquiry into the family histories did not reveal any hereditary tendencies, heredity has played an important part in a number of the recorded cases, as in the family reported by Dubreuil-Chambardel, in which the grandmother, mother, and two daughters all had exophthalmic goitre; and in that described by Souques and Lermoyez, in which there were seven cases. In several instances, as in those reported by Gaucher and Salin, Hazen and Rost, syphilis was thought to be the underlying factor, but in none of Dr. Heiman's cases was there any history or evidence of that disease. Of the three cardinal symptoms of exophthalmic goitre—tachycardia, exophthalmos, and enlargement of the thyroid gland—Barret states that tachycardia is the first to develop in children. The exophthalmos is usually less marked in children than in adults, though it is rarely missing. In Barret's series it was absent in only eight cases. The basal metabolism test, which is the most important diagnostic guide, was performed in Dr. Heiman's cases, and showed that the degree of severity of the symptoms and signs corresponded with the degree of elevation of the metabolism rate, the results before treatment being in the first case 12 per cent., in the second case 20 per cent., and in the third case 52 per cent. Dr. Heiman maintains that the most rational treatment of exophthalmic goitre is, first, a regimen of strict physical and psychical rest for a period of 6–10 weeks. If the patient then shows no improvement a short stage of X ray treatment should be employed. If there is then no response, thyroidectomy should be performed. Considerable improvement took place in one of Dr. Heiman's cases in which partial thyroidectomy was carried out. In the other two cases, in which rest was the only treatment, the improvement was less striking.

THE CAUSATION OF THIRST.

THE sensation of thirst, so familiar yet vague and elusive, has often aroused the curiosity of the investigator, and at least two theories are current to explain its origin. Thirst might be due primarily to loss of water from the tissues in general, the actual sensation being a secondary local reference to the pharynx; or it might be a consequence simply of loss of water from the mucosa of the mouth and pharynx, and independent of the general state of the tissues. Some well-known facts point to the one theory and some to the other. Thus, the rapidity with which thirst is quenched by drinking water or by such devices as the sucking of a lemon, or the antidipsic button used by soldiers in arid climates, both of which promote a flow of saliva, point to the local desiccation theory; so does the thirst familiar to the nervous orator, or that engendered by atropin. An experimental investigation by G. T. Pack,[1] of Yale, gives further support to this view. He sought to learn whether pilocarpine, by promoting a flow of saliva, exerted an antidipsic effect, and found that it did. Rabbits deprived of water for a sufficient period were offered water for a certain length of time and the amount consumed was noted. Similar rabbits treated with pilocarpine took much less water even in double the time; yet the general desiccation of the tissues would probably, if anything, have been greater after pilocarpine than before, on account of the flow of digestive juices.

While all these facts seems to be arrayed in favour of the local desiccation theory of the origin of thirst, there is a not inconsiderable body of evidence in favour of the general tissue-desiccation theory. For instance, thirst can be allayed or prevented by intravenous or rectal injections, or by the administration of water by a stomach tube. Again, the thirst of diabetes or of chronic polyuria is not assuaged by pilocarpine. Mere wetness or dryness of the mucosa of the mouth and pharynx is therefore not the only factor. Pack's rabbits, although they took less water in a given time with than without pilocarpine, nevertheless frequently took *some* water; thirst was reduced but not abolished. A compromise between the two views would be not unreasonable. Local drying apparently always produces thirst; local drying would obviously be greatly accelerated and would reach the sensation-point sooner if there was a generalised desiccation; sensations arise first from the pharynx because, though normally moist, its opportunities for drying are greater than in other mucous membranes, owing to its forming part of the respiratory tract, and possibly also being endowed with special end-organs sensitive to drying.

[1] Amer. Jour. Physiol., 1923, lxv., 346.

THE LISTER WARD IN THE ROYAL INFIRMARY OF GLASGOW.

CONSIDERABLE feeling has been aroused both in and beyond Glasgow by the recent decision of the managers of the Royal Infirmary to demolish the Lister Ward, the workshop in which that great surgeon evolved his antiseptic treatment of wounds. The ward forms part of the old Lister block, which was left intact in the precincts of the present Infirmary when the plans were published in 1907, and it stands some 60 feet from the new building. The entire block has been condemned, but public sentiment finds expression in a petition, already signed by large numbers among the medical profession and the laity alike, that at least the first storey—the Lister Ward—should be retained as a memorial of one to whose fame Glasgow is proud to have contributed. The reason for the managers' decision appears to be three-fold: that the ward is not suited to modern requirements of surgery, that the space occupied is essential for light and air, and that to retain the ward would affect the symmetry of the Infirmary forecourt. To these utilitarian, hygienic, and æsthetic grounds for total demolition is added the cost of reconstructing the ward when the upper storeys are removed. All four arguments are ably disposed of by Mr. James A. Morris, F.R.I.B.A., in his pamphlet entitled, "A Humble Plea for the Retention of the Famous Lister Ward in the Royal Infirmary, Glasgow."[1] On the purely technical side of these questions expert advice must prevail, but the main issue at stake in the public mind is one which has again and again been a matter of controversy in recent years, and which amounts to this: is it justifiable in present-day circumstances to sacrifice a part (however small) of a modern conception to sentiment, and to honour a great pioneer of progress by an act of conservatism? If the continued use of the ward should in any way impair any patient's chances of recovery, then to protest against its demolition would be folly; but it was those who had the most direct interest in the well-being of their patients—the medical staff of the Infirmary—who were the first to sign a petition pleading for the retention of the ward. Surely, then, even at a small financial outlay, and, it may be, at the expense of the hypersensitive æsthetic taste of a few, it is justifiable—nay more, it is a civic duty, to preserve this historic battlefield in the age-long fight against disease, as an inspiration for those who follow after.

[1] Glasgow: Maclehose, Jackson and Co. 6*d*.

THE LONDON SCHOOL OF DERMATOLOGY.

FOR a long time it has been realised that dermatology in London has suffered from want of concentration and combined effort. Each of the large London hospitals has its dermatological department, for which, as a rule, one physician alone is responsible. St. John's Hospital for Diseases of the Skin provides a centre where there is ample material, and where there are also considerable facilities for concerted teaching, but up till now these various interests have been working independently. During the last few months negotiations have been proceeding between the medical staff of St. John's Hospital and other

London dermatologists with a view to further developing the existing facilities at St. John's, and combining to establish a central school for the study of diseases of the skin where the teaching of clinical dermatology and cutaneous pathology could be obtained. A scheme has now been adopted which has received the unanimous approval of all those concerned, and which has been sanctioned by the board of management of St. John's Hospital. The essential points of the scheme are that to the existing staff of St. John's Hospital additional members should be appointed, both active and consulting. The consultants are Sir Malcolm Morris and Dr. James H. Stowers, while to the acting staff there have been elected Dr. Wilfrid Fox, dermatological physician to St. George's Hospital, and Dr. Henry MacCormac, dermatological physician to the Middlesex Hospital. Dr. J. M. H. MacLeod will be director of the Pathological Department, Dr. Wilfrid Fox will be responsible for the V.D. Department, and Sir Malcolm Morris and Dr. J. H. Stowers will each have a seat on the board of management.

The London School of Dermatology will have an intimate connexion with St. John's Hospital, where all the teaching will be carried out, but the management, though working in close association with the medical committee of the hospital, will actually be in the hands of a larger body, consisting of the medical staff, both consulting and active, of St. John's Hospital, together with the physicians in charge of the dermatological departments of the 12 metropolitan hospitals with undergraduate medical school attached. We wish the movement all prosperity.

THE Harveian Oration will be delivered at the Royal College of Physicians of London by Prof. E. H. Starling, C.M.G., F.R.S., next Thursday, Oct. 18th, at 4 P.M.

THE Honorary Fellowship of the American College of Surgeons is to be conferred on Sir W. I. de Courcy Wheeler, President of the Royal College of Surgeons in Ireland, who has accepted the invitation of the Regents of the College to deliver the Fellowship address at the Clinical Congress in Chicago on Oct. 26th.

A SOCIAL evening will be held at the House of the Royal Society of Medicine on Tuesday, Oct. 30th, at 8.30 P.M., when the President will present the Gold Medal of the Society to Dr. Gowland Hopkins, F.R.S., professor of biochemistry at the University of Cambridge. At 9 P.M. Prof. Hopkins will deliver an address entitled Stimulants of Growth.

The Services.

Col. C. H. Bowle-Evans, Ind. Med. Serv., is appointed Hon. Physician to The King, Ind. Mil. Forces, vice Maj.-Gen. Sir William R. Edwards, I.M.S., ret.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Majs. to be Lt.-Cols: Bt. Lt.-Col. A. W. Gibson, vice Lt.-Col. R. F. Ellery, ret. pay. R. N. Hunt, vice Lt.-Col. F. J. Palmer, ret. pay.

Maj. A. C. H. Gray relinquishes the temp. rank of Lt.-Col.

TERRITORIAL ARMY.

Capts. C. H. Carlton and J. Wallace to be Majs. (prov.).

Lieut. F. G. Hobson resigns his commn. and is granted the rank of Maj.

TERRITORIAL ARMY RESERVE.

Col. Sir C. A. Ballance, having attained the age limit, is retd., and retains the rank of Col.

Maj. W. T. Blackledge, having attained the age limit, is retd. and is granted the rank of Lt.-Col., with permission to wear the prescribed uniform.

ROYAL AIR FORCE.

Flying Officer J. D. Leahy is promoted to the rank of Flight Lt.

INDIAN MEDICAL SERVICE.

A. H. Craig to be Capt.

G. H. FitzGerald to be Lt.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

XL.—THE MEDICAL TREATMENT OF EARLY OR SUSPECTED DUODENAL ULCER.

THE most essential factor for success in the medical treatment of duodenal ulcer is an early diagnosis. The clinical syndrome in the majority of cases is fortunately better defined than in gastric ulcer, or in any of the other organic dyspepsias, and often justifies a positive opinion. Nevertheless, whenever possible confirmation by radiography, gastric analysis, and examination of the stools for the presence of occult blood should be obtained. Lacking these, response to appropriate treatment may itself confirm a suspicion. It must be accepted that there is no accurate correlation between the clinical and pathological duration of an ulcer. Since, however, the majority of sufferers presenting themselves for investigation in hospital or clinic have had characteristic symptoms for months rather than weeks, and often for years, it seems reasonable to suppose that recognition at an earlier stage is commonly within the bounds of possibility. The importance of early diagnosis is well borne out in a recent paper by Nielsen.[1] Regarding as "cured" those patients who had remained entirely free from gastric symptoms up to or beyond two and a half years from their discharge from hospital, he obtained the following figures in a series of 182 cases. Diagnosis was confirmed by hæmorrhage, radiographic findings, or operation.

(A) Duration of symptoms before treatment.
(B) Percentage cured.

(A)	(B)	(A)	(B)
Less than ½ a year	60	3 to 5 years	20
½ to 1 year	54·1	5 to 10 ,, ...	10·8
1 to 3 years	36·9	Over 10 ,, ...	5·3

In reviewing these figures it should be noted (1) that they include cases of gastric as well as duodenal ulcer, and that a high proportion were in "older and fairly severe cases"; and (2) that the regime, as described, was very much less strict than the regimes in vogue in this country and America, and did not include certain items which we should regard as essential. With wise selection of cases, a diagnosis within the first three months of symptoms, and a carefully planned initial regime and after-treatment, a higher recovery rate than 60 per cent. should certainly be obtained.

Selection of Cases.

Young subjects are more responsive to treatment than those in the later decades. During and after middle life medical treatment should never be instituted without a thorough investigation, for occasionally an early carcinomatous ulcer of the pylorus may simulate a duodenal ulcer. Hæmatemesis or melæna occurs in a very small proportion of cases, and the treatment of hæmorrhage will not be considered here. It should, however, almost always be medical in the first instance, and in young subjects should be medical throughout. When hæmorrhage is the first symptom the outlook is frequently favourable. The treatment outlined hereunder is such as might be prescribed for a man between the ages of 18 and 40 years, convalescent from the immediate effects of a first hæmorrhage; giving a short history of uncomplicated duodenal ulcer dyspepsia; or a longer or relapsing history lacking previous adequate treatment and radiographic evidences of gross scarring.

The Aims and Details of Medical Treatment.

These do not differ from the aims of surgery. They are: (1) To secure the optimum rest for the stomach as a whole, and for the pyloric sphincter and ulcer-bearing area in particular. (2) The inhibition or neutralisation of excessive acid secretion, with a view

[1] N. Aage Nielsen: Acta Medica Scandinavica, lviii., i., 1923.

to minimising the "acid control" of the pylorus and giving "chemical rest" to the ulcer. (3) As a preliminary to these, the eradication of focal sepsis.

Rest and Warmth.—Gastric rest is primarily obtained by general physical rest. With lowered activity on the part of the whole body food requirements are diminished, and the peristaltic and tonic activity of the stomach, subjectively expressed by hunger and appetite, are simultaneously decreased. In a similar way warmth also discourages excessive motility. The patient should therefore be put to bed in a warm room and with warm clothing, and only allowed up for visits to bath or lavatory.

Diet.—Gastric rest is encouraged by a diet which calls for the least possible motor and secretory activity, and is not calculated to cause distension. The proteins, being the only foodstuffs undergoing an important phase of their mechanical and chemical digestion in the stomach, must as far as possible be excluded. Even to milk there is the objection that its protein element creates a specific response. Thus a pint of milk is capable of producing definitely higher curves both of free and total acidity and a more prolonged gastric phase, as determined by fractional analysis, than a pint of standard gruel.[2] In practice, however, it is so inconvenient to dispense with milk that it forms a part of all ulcer dietaries, and its fluid nature and nutritional value help to outweigh the disadvantages. The soft farinaceous foods are theoretically and practically appropriate; they do not require gastric digestion or stimulate a high acidity. Fats and oils possess the important faculty of causing some actual inhibition of acid secretion; they are also lubricant and of high calorie value.

To avoid distension of the stomach small feeds must be given. To avoid the pyloric hypertonus, which results when the stomach is empty and unopposed "acid-control" established, the feeds must be given often. Eight feeds in the day at 8 and 10 A.M., 12 noon, and 2, 4, 6, 8, and 10 P.M. is a convenient distribution, though in the Sippy and similar regimes smaller and more frequent feeds are preferred. An additional feed in a thermos flask should be handy in case the patient wakes at night. The dietary may include: Benger's food, gruel made with refined oatmeal, ground rice, semolina, arrowroot, cornflour, malted milk, cream (4 to 6 oz. daily), milk (2 to 2½ pints daily), sugar or lactose, and the juice of a sweet orange or grape-juice. In addition an occasional rusk may be given to encourage the flow of saliva, to keep the mouth clean, and to provide the pleasure of mastication. No feed should exceed half a pint in bulk, and unless the patient complains of hunger they should usually be of smaller amount—say, 6 to 8 oz. The milk can be given mainly in conjunction with the farinaceous foods; when taken alone 15 gr. of sodium citrate should be added to each feed. This regime should be followed for two weeks, and then supplemented by the addition of two eggs lightly boiled, poached, or beaten up. In the fourth or fifth week two more eggs, scrambled or boiled, thin bread-and-butter without crust, custards, fruit-jellies, Force, or Cornflakes may be added. In cases with "duodenal hurry" more frequent feeds may be necessary, but very small feeds in these cases sometimes fail to achieve relief of pain. Smoking should be prohibited. After the first fortnight there should be a gradual gain in weight, and at no point should there be appreciable loss.

Medicines.—Belladonna is probably the most useful drug in the treatment of duodenal ulcer. It should be given in 5-minim doses a quarter of an hour before every alternate feed, and may be administered in conjunction with emulsion of magnesia (B.P.C.) 1 drachm to 1½ drachms. If dryness of the mouth or visual disturbance becomes troublesome three instead of four doses in the day may be given with 2 drachms of the magnesia emulsion. The action of belladonna is antispasmodic and antisecretory. It has been shown to modify the fractional test-meal curve more efficiently than alkalies, probably by causing relaxation of the pylorus and permitting duodenal reflux. Alternating with the belladonna, and again at an interval of a quarter of an hour before feeds, one tablespoonful of the best olive oil is given. Midway between feeds, when the acidity is likely to be highest, and again at bed-time, bismuth oxycarb., gr. 15, should be taken. If night pain has been troublesome a hypodermic injection of atropine, gr. 1/100, at bed-time may also be given in the early stages. For constipation liquid paraffin is generally satisfactory, but salts or enemata may be required.

Eradication of Sepsis.—Dental or tonsillar sepsis should be radically dealt with before the intensive treatment is started, and careful attention must be paid to the hygiene of the mouth throughout. If possible radiograms of the teeth should be taken. Occasionally it may be necessary to advise removal of an infected appendix. By consultation between physician and surgeon at the time of operation the desirability of medical or surgical treatment may then be assessed after actual inspection of the ulcer.

Duration of Intensive Treatment.

This should seldom be less than six weeks and never less than a month. The treatment should in all cases continue until (1) there has been no complaint of spontaneous pain for at least three weeks; (2) all reflex signs, such as "guarding" or increased abdominal reflex on the right, and deep tenderness, have disappeared; (3) the stools are found to be free from occult blood on three occasions. The benzidin test for occult blood gives sufficiently reliable results for practical purposes.

After-treatment.

This is almost as important as the intensive phase. When possible the patient should be sent for a holiday. During this period he should follow out the same rules, but allow himself greater liberality in the amounts of food consumed, and instead of staying in bed should rest after meals for one hour. He may cut down the number of feeds to six per diem while increasing their bulk; thus by introducing an extra middle-morning feed and a bed-time feed he can conform with the ordinary meal-times of the household. Potatoes mashed with butter and puréed vegetables may be added to his diet. At the end of two weeks' holiday a little cold boiled bacon or sardines may be taken with breakfast, and steamed or boiled fish with lunch or supper. The olive oil and belladonna should be continued. For the next three months the same principles should be followed with gradually increasing variety in the meals. These should still be made up as far as possible with milk, cream, butter, fats, and farinaceous foods, but with the addition once a day of fish or fowl. After three months a return to normal life and dietary is permissible, but with the following restrictions, which should be observed rigidly for a year and as closely as possible thereafter.

Hunger must be particularly avoided, and for this purpose biscuits or milk chocolate should be carried in the pocket and a night feed provided in case of waking. Physical and mental overstress and mental activity at meal-times must be avoided so far as circumstances permit. Smoking must be moderate and only "on a full stomach." Irritating particles such as seeds, skins, nuts, and vegetable fibre must be eschewed. Condiments, meat-soups, mustard, pepper, spirits, and salted or twice-cooked meats must be avoided altogether. Meals must be taken slowly and chewed thoroughly. The dentist must be visited regularly twice a year. Fats and farinaceous foods should still be preferred, and olive oil, or in winter a cod-liver oil preparation, taken with breakfast and the evening meal.

The treatment outlined above is not intended as a "stock" treatment applicable in every case of duodenal ulcer, for in no condition is it more essential to study clinical and personal peculiarities. It is sufficiently simple to allow of its employment in the patient's own home, and without the supervision of a trained nurse.

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[2] J. A. Ryle: Guy's Hospital Reports, lxxi., 2, 1921.

Special Articles.

THE FUTURE OF DRUG THERAPY.*

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THE Pharmaceutical Society of Great Britain has done so much to advance the study of pharmacy and pharmaceutical chemistry in this country in a short period, for its charter only dates from 1843, and can look back on such a phenomenal record of progress and success entirely as the result of its own exertions without Government or outside assistance, that it is well you should recognise that your President and Council are not altogether infallible, as they have shown by doing me the honour to invite me to address you to-day, although I possess no special knowledge of the art and science of pharmacy.

Materia medica is the most ancient of all medical studies and credulity in the virtues and curative powers of drugs the most inherent of all human creeds. Medicine was once nothing but a system of recipes and rituals devised to combat the symptoms of disease. With the birth of science and more particularly with the growth of pathology some insight was obtained into the nature of disease; it was material, it caused grave bodily changes, and it caused physicians to lose hope in the efficacy of drugs. Treatment assumed an insignificant position, the old shibboleths and traditions of ages were discarded. Skoda, the founder of scientific diagnosis, who exercised wide influence in the nineteenth century, was the strongest advocate of therapeutic nihilism and carried his views to the extreme limit. The more scientific part of the medical profession slowly followed in the wake. Treatment passed out of fashion and all thought and research in medicine was centred on diagnosis and pathology. All this was perhaps to the good, the recipes and formulæ, the tradition of generations, were gradually interred, but there was nothing with which to replace them, and the public left to itself was at the mercy of "systems of treatment" and the prey of the vendors of "cure-alls."

The Science of Treatment.

The science of treatment is the newest of the biological sciences; it is dependent on chemistry, physiology, and pathology, and could only come into existence when these sciences had attained some degree of completeness. So far have the views of Skoda become a part of the past that Prof. Ehrlich, for many years the director of the Institute of Experimental Therapeutics in Frankfort, in the opening sentence of an address he gave in this country, said, "There can be no doubt that the three great fields of knowledge, pharmacology, toxicology, and therapeutics in their theoretical and practical aspects form the most important branches of medicine."

I desire to give you some reasons for believing that treatment by drugs is as yet only in its infancy, and to offer you, therefore, every encouragement in the profession you are adopting, which I believe has a bright future, and regarding it in its broadest sense unlimited possibilities. The discovery of diphtheria toxin as a curative treatment opened up a great vista of the possibilities of serum therapy in the future, but this hope has not been fulfilled, and in spite of the fact that perhaps the best brains in medicine have been engaged in this field of research for more than a quarter of a century; diphtheria antitoxin remains to-day almost unique in being the only serum of proven therapeutic value in the treatment of disease in this country. During this period pharmacy appears to me to have taken little heed of this new trend of medical thought, the search for specific sera, and her disciples have continued their labours under the old conditions. Perhaps pharmacy was right, for it is only to-day that the medical profession is beginning to awake to the fact that they have been following a side issue. One would have imagined that the great progress in surgery which was only rendered possible by understanding the use and action of drugs—I refer, of course, to anæsthetics and antiseptics—would have suggested the possibilities and future of drug therapy, but such was not the case.

Our whole outlook on treatment has been altered by recent and gradually accumulated knowledge that the animal body elaborates its own drugs, stores them generally at the seat of formation, and doles them out to the tissues to meet the needs of the animal economy. Some of these are crystalline alkaloids, like adrenalin from the suprarenal capsules, and thyroxine from the thyroid gland. Others, like insulin and pituitrin, have yet to be prepared in a pure form, but we know that the former changes glucose in some way so that its oxidation can be continued by other processes in the body, and that its absence results in an excess of sugar accumulation in the blood, a condition termed diabetes; pituitrin, I have reasons for believing, is the chemical agent in the normal woman which causes the uterus to contract. Ovarian activity excites the pituitary gland and determines the liberation of pituitrin into the circulation, and it is well recognised that its use in obstetrics has largely superseded that of ergot. I cannot offer a more convincing example of the inner meaning of drug actions. The normal functions of the body are regulated at least partly by these natural drugs, and it may be that all functionings are of this nature and the object of a nerve-supply is to localise the liberation of the drug in some definite situation. Obviously, then, animal products have assumed once again a great importance in pharmacy and pharmaceutical chemistry, such an importance indeed that some knowledge of animal anatomy and physiology is almost an essential to the educated pharmacist of to-day, and I have little doubt that before long it will form a not unimportant part of your curriculum. These examples, however, only refer to internal factors as a cause of disease; and there are few organs or tissues of which it is not possible to increase or diminish the activity by the use of drugs.

Drug Treatment in the Cure of Disease.

We may now consider how far drug treatment has advanced in the cure of disease due to the introduction into the body of some extraneous factor. In several instances, especially in the protozoa, it is possible to destroy the causal agent of a disease by drugs; the disease is cured but, curiously enough, the action is not necessarily brought about by the direct effect of the drug on the causal agent. The organic compounds of arsenic have no decided effect on the spirochætes of syphilis in the test-tube, but they destroy them in the body; emetine, an alkaloid from ipecacuanha, does not kill the amœba of tropical dysentery except in the human body. The Bayer Laboratory have lately introduced a derivative of trypan-blue which destroys trypanosomes in the body of both men and animals; what this means may not be immediately appreciated; it is nothing less than the opening up of immense tracts of tropical Africa now prohibited by sleeping sickness in man and the bite of the tsetse-fly (nagana) in animals.

It is true that chemists and pharmacologists have as yet made little progress in their attack on bacterial diseases such as tuberculosis, but the fact that one of the quinine derivatives, ethylhydrocuprein, administered to man in appropriate doses, destroys the micro-organisms causing pneumonia is a happy augury even in this field. Most of these new drugs and cures have in the past emanated from Germany, because in that country the opportunity for studying higher chemistry has been open to almost all, and Germany early recognised that new discoveries meant new industries and increased wealth; with them to foster research was a business proposition, not a charitable

* An address delivered at the opening of the session of the School of Pharmacy on Oct. 3rd.

ideal. With us research has been left to the individual, but the Pharmaceutical Society has shown originality and done much to further investigations in its special sphere, and incidentally to raise the status of English pharmacy.

How Drugs Work.

I propose now to consider how these drugs which are swallowed and injected so plentifully produce an action on the body tissues. It has, for example, been imagined that they combined chemically with some constituent or complicated "side chain" in the living cell, and for 50 years chemists have been trying to change the molecule of well-known chemical substances so as to produce some required action—that is to say, that the chemical constitution of a drug determined its action in the body. It is probable that subtle energy factors binding the molecule, factors not displayed in a chemical formula, control the pharmacological action: certain it is that drug action is not determined directly by chemical combination with body constituents, but rather by delicate physical processes such as those of absorption, solution, and surface-tension. Chemists have not yet determined the requirements of the molecule even for the production of colour. On the other hand, slight alterations of a molecule already complicated and with a known pharmacological action have led to the production of many useful compounds, and not infrequently, under such special conditions, we may foresee the type of action which will accrue by such alterations. Such conditions have led to the synthesis of the new local anæsthetics, antiseptics, antipyretics, diuretics, tropeines, and many others.

I may briefly state some of the factors which chemists and pharmacologists must appreciate in seeking an explanation of drug actions. At the outset we are met by difficulties, as we know so little of what determines absorption through living membranes. Why is common salt absorbed so readily into the blood and why are Epsom salts not absorbed? It is well that they are not, for a very few grains of Epsom salt make a fatal dose. Why should iron be absorbed with such difficulty and arsenic with such ease? All these are physico-chemical problems which await solution. As the drug passes through a living membrane or cell there is for a time some difference in tension on the two sides, and this passage of the drug in itself produces an action. One of the first effects of inhaling a little chloroform is to cause the bronchiolar muscle to contract; the contraction continues until the two sides of the membrane show an equal saturation of chloroform. Similarly any passage of a foreign substance into the pericardium produces an effect on the heart, the result of the alteration in tension on the two sides of the cell membrane. A wineglassful of 30 per cent. alcohol produces an effect in five minutes which we may call exhilaration, but the effect is transient, lasting half an hour or less, and so soon as absorption is complete ceases, though the percentage of alcohol in the nerve cells does not reach its maximum till about half an hour: this effect is due to the passage of alcohol into the nerve cells, and is not a specific effect of alcohol.

Drugs may act not by any particular action on living matter, but because they collect in such quantities in living cells as to clog the working of the machine. The vast group of hypnotic drugs differing widely in their chemistry have one common factor, the power of diffusion into living cells, comparative insolubility in water, and a greater solubility in fat and fat-like compounds. Lecithin and cholesterin are the principal fat-like bodies of animal tissues, and these are present especially in nerve structures. The drug will thus pass into the nerve cells, and change the physical conditions, thus interfering with the activity of the cells. So that the most powerful hypnotics are those which combine a very slight solubility in water with a very high solubility in olive oil or "brain lipoid." It is not, however, a general rule that drugs which exert a selective action on some tissue tend to collect in that tissue: strychnine does not collect in the spinal cord nor morphine in the brain: exceptions there are, such as the members of the great group of hypnotics, and the active glucosides in foxglove leaves, which are picked up from the circulation almost entirely by the heart.

Adsorption or the concentration of soluble substances on surfaces accounts for the action of some drugs. Thus if diphtheria toxin in salt solution is filtered through bone-black the toxin becomes adsorbed to the charcoal. The toxin of the cholera vibrio is similarly adsorbed by kaolin, and as the cholera infection is confined, at least in its early stages, to the alimentary canal, it is not perhaps remarkable that we should have in this insoluble inert powder kaolin a substance which is almost a specific in the treatment of this disease.

The characteristics of old age are in many cases, if not all, the results of poisoning by the absorption of toxic substances from the alimentary canal. These poisons may be produced by the growth of micro-organisms, and it was for this reason that Metchnikoff introduced his Bulgarian bacillus, which grows freely on milk and liberates acid: this infected milk, when taken in large quantities, was supposed to liberate enough acid in the alimentary canal to destroy or limit the growth of other organisms, and so prevent the formation of toxins and the onset of old age. Disinfectants have so far been ineffectual to diminish materially the intestinal flora—they poison the body before the bacteria; it may be that more happy results will accrue by using the principle of adsorption. Surface-tension again certainly explains the action of some substances, and osmosis is the principal factor concerned in the action of the saline purgatives and diuretics. Fashions in medicine and pharmacy we have always with us—for example, the modern prevalence of vaccines and perhaps the use of metallic colloids. Colloids are still on their trial, but the metallic colloids possess some remarkable properties resembling ferments: thus metallic rhodium splits up formic acid to hydrogen and carbon dioxide, and a solution of metallic platinum containing only 1/300,000 mgm. per c.cm. splits up hydrogen peroxide into water and oxygen. How far the properties of colloids can be made use of in medicine has yet to be decided.

Conclusion.

I have endeavoured to show that the future of curative treatment lies in drugs, and that the discovery of new drugs or methods of treatment can only be attained by those who have had the requisite scientific training. You cannot all, however, become wedded to science, and many of you will no doubt become retail pharmacists, and here to be really successful something more than accurate knowledge and the art of dispensing is required. Sympathy, understanding, a knowledge of life and men are of inestimable value. Suggestion is sometimes more than half the battle in the treatment of the sick, and the patient who sees his own medicine being accurately dispensed derives comfort and benefit from the ritual of the dispensing and perhaps the cheering words of the dispenser. Some years ago the late Dr. W. H. Rivers and I performed some experiments on men, estimating the amount of work certain muscles could perform under fixed conditions, in order subsequently to determine the influence of drugs. The experiments so performed were useless, since we found that any drug greatly increased the man's work. The drug day was all-important, and work was always greater on that day; the influence of suggestion was greater than the influence of the drug.

You who are entering a new profession to-day may justly be proud of your school, with its list of eminent professors, past and present, your museums, library, and laboratories, and of the Society under whose auspices you will be educated, and which has done much to raise the status of pharmacy. The researches done in these walls have of themselves opened new chapters in chemistry and pharmacy, and the publication of the great and authoritative work, the Codex, every monograph in which constitutes an investigation in itself, is but one milestone in its history.

THE REMUNERATION OF INSURANCE PRACTITIONERS.

1. THE OFFER OF THE MINISTER OF HEALTH.

THE following letter has been received by the Medical Secretary of the British Medical Association from the First Secretary of the Ministry of Health:—

SIR,—1. The Minister of Health, having given very careful consideration to the memorandum submitted by the Insurance Acts Committee in August, and to the representations made by the deputation on the 2nd instant, and having conferred on the matter with representatives of the approved societies operating in Great Britain, is now enabled to state the conclusion he has formed as to the general capitation rate which should be prescribed for the calculation of the remuneration of insurance practitioners in England and Wales, after Dec. 31st of this year, and as to the period for which that rate should remain in force.

2. At the outset it is desired to make clear that the Minister accepts unreservedly the view of the Committee that the rewards of medical practice should be such as to attract the right type of recruit to the profession, and that the remuneration of insurance practice should not compare unfavourably with that derived from private general practice of a fairly comparable kind—it being assumed that in any such comparison with private practice due account is taken of all relevant factors including, for example, the advantages of payment at a contract rate, which obviates the risks of bad debts and relieves the practitioner of the labour and expense involved in the preparation and collection of accounts.

3. In these circumstances it is unnecessary for the purpose of this communication to enter into any detailed examination of the actuarial questions raised from the latter part of paragraph 3 of the Committee's memorandum, which would be relevant only if it were sought to justify an offer on the ground that it constituted the maximum change which the available funds would bear. Nevertheless, to avoid misconstruction, it must be stated definitely that the Minister does not accept as accurate the statements contained in that paragraph. The Committee are under a complete misapprehension in supposing that the difference between the total receipts and the total payments for benefit and administration is in any sense a "surplus." It is true that at present the contributions provide more than is necessary to meet the current charges, but the liabilities under National Health Insurance increase with the ages of the insured persons and large reserves will ultimately be required to enable the claims to be met. If these reserves are accumulating more rapidly than is necessary, a surplus will be disclosed as a result of the actuarial valuation now in progress, but it must be stated that the amount of that real surplus will be so widely different from the sum which the Committee seem to have in mind as fundamentally to effect any conclusions which might otherwise be drawn from the figures given in paragraph 3 of the Committee's memorandum.

4. In deciding as to the rate now to be offered the governing consideration with the Minister has been that it should—in the language used by the then Minister in the negotiations preceding the 1920 arbitration—represent a fair remuneration, in the circumstances of the period during which it is to be in force, for the professional work involved in giving adequate attendance and treatment to insured persons under the proposed conditions of service. The case put forward by the Committee in support of a rate of not less than 9*s*. 6*d*. and possibly as much as 10*s*. 9*d*. has been examined from this point of view.

5. With reference to paragraph 4 of the Committee's memorandum, which raises the question whether the capitation rate accepted by the profession in 1913 was or was not adequate, the Minister could not agree that any difficulty in the early years of national health insurance in obtaining the services everywhere of an adequate number of practitioners was in the main due to financial considerations. If, however, or in so far as the Committee desire to base their claim now on any alleged inadequacy in the 1913 settlement, it must be pointed out that, whatever may then have been or may still be the views of the profession, there was and is a strong body of opinion among those outside the profession most conversant with the facts that the terms conceded by the Government of the day were exceedingly favourable to the doctors.

6. The Minister agrees that in the determination of a fair capitation rate some regard must be had to the award of the arbitrators in 1920. But he cannot wholly ignore the fact that the arbitration took place at a period of optimism and inflation, when increases of remuneration were being conceded very liberally on all hands, and the consequent probability that had the arbitration been held in the different atmosphere of a year later the result might have been relatively less favourable to the profession. Moreover, a consideration had then to be taken into account to which the Insurance Acts Committee drew attention—namely, the temporary enhancement of the earning power of the medical profession on account of the shortage of doctors produced by the war. It will hardly be contended that this consideration now applies in anything like the same degree.

7. While admitting that the 1920 award must be taken as one of the factors of calculation, the Minister cannot accept the contention of the Committee that he is stopped from taking into account the reduction two years later to 9*s*. 6*d*. on the ground that the acceptance of this reduction was urged by the then Minister of Health on grounds of patriotism and national economy. The Minister fully appreciates the recognition of national necessities manifested by the profession in the spirit in which they accepted a reduction of remuneration which they may not at the time have been convinced was economically justified. But it is possible now to apply an ordinary economic criterion to that rate by ascertaining what effect, if any, the reduction in the rate in fact appears to have had on the total number of doctors accepting service. Had the new rate been appreciably below the current remuneration obtainable in private practice—i.e., had it been in any true sense inadequate—it must have failed to attract new recruits to the panel and the dissatisfaction of individuals would undoubtedly have been reflected in a progressive diminution of the total number under agreement. In fact, however, no such diminution was observed. During the last quarter of 1921, when the negotiations were in progress, the total number of practitioners under contract with committees in England remained stationary, but in the first quarter of 1922, when the reduced rate became operative, the total for England increased by no less than 128, a figure appreciably in excess of the normal quarterly addition. In Wales for this period the total remained stationary. In the 18 months from January, 1922, to July, 1923, the increase for England and Wales was 552, and as this is a net figure after making good wastage by deaths and resignations, the actual number of new entrants was considerably larger. For Scotland the number of insurance practitioners was in 1920, 1706; in 1921, 1713; in 1922, 1769; and in August, 1923, 1770. It is significant also that in the advertisements of practices for sale the size of the panel has continued to be almost invariably mentioned as an inducement to purchase.

8. Underlying the succeeding paragraphs of the Committee's case appears to be an assumption that doctors are entitled to such remuneration as will secure them against any lowering of their pre-war standard of living beyond that entailed by increased taxation. This assumption the Minister is unable to accept, and he doubts whether it is really intended, since in the opening paragraph of their memorandum the Committee recognise that the necessity for every reasonable economy, both public and private, is still evident, and state that the medical profession does not expect to escape the effects of this financial stringency. In the same and following paragraphs the Committee have also recognised, and indeed urged, the necessity of relating the remuneration offered for insurance practice to that which can be earned in private practice. But the possible earnings of the profession in private practice (as in other spheres of medical employment) must inevitably be affected by general economic causes, particularly the tendency of earnings among other professional classes which are recruited broadly from the same sections of the community. If there is a tendency for those earnings to fall to the extent of a reduction of the standard of living, the medical profession, not through any act of the Government, but through the operation of ordinary economic forces, must participate in the fall, unless collateral conditions apart from earnings happen to make recruitment for that profession less attractive than for other professions (of which there is no present indication), and this must affect consideration of the appropriate remuneration to be offered in insurance practice. Thus comparison with professional earnings in general is relevant to the present question, and the Minister is bound to take note of the fact that while some professions have been more successful than others in retaining temporary war increases, it is common knowledge that a very large section of the professional classes have as a result of the war suffered a reduction of their real income over and above that entailed by increased taxation.

9. Close comparison of the average remuneration of different professions is, however, necessarily a matter of extreme difficulty and from the nature of the case, in the Minister's opinion, the most appropriate comparison for the present purpose is with the Civil Service. In the case of professions remunerated on a scale rate fair comparison is practically impossible, since these rates represent not merely the remuneration of the principal, but an allowance for clerical and technical assistance of kinds, the cost of which has very greatly increased since the war. The extent to which post-war increases represent merely compensation

for increased working expenses' cannot be ascertained, and even if there were any ascertainable relation between gross and net remuneration there is the further difficulty that these scale rates in many cases (e.g., in conveyancing or architecture) are a percentage of the total cost, which in turn has been subject to varying degrees of inflation since the war. Broadly speaking, the administrative section of the Civil Service (as distinguished from the merely clerical grades), and the higher ranks of the municipal services form the only large body of salaried professional men in whose case the ratio of post-war increase in remuneration is ascertainable with any exactness. The medical profession themselves recognised this when they based their claim in the later years of the war to a war bonus, and in 1919–20 to an increased capitation rate, largely on the war bonus which had been conceded to the Civil Service.

10. It is not suggested that a bonus based on the index figure reflects with any accuracy the incidence of the rise of prices on the expenditure of the professional classes. Without admitting the validity of Prof. Bowley's criticism of the index figure, it may be conceded that a more scientific method of adjustment would have been required if the object of the war bonus had been to place the higher ranks of the Civil Service in the same economic position—apart from the increase in taxation—as they were before the war. But the bonus was not designed to secure this, except in the case of the lower grades; and in its application to the administrative grade it represents the extent to which in the opinion of successive Governments, confirmed by Parliament, the financial exigencies of the country permitted of the effects of the rise of prices being mitigated in the case of the higher paid ranks of the public service. Whatever its theoretical defects this bonus has in fact been largely adopted by public and local authorities, as affording the most generous measure of relief consistent with the paramount obligation of national and local economy. Though insurance practitioners are not in the strict sense public servants, yet in so far as they are paid out of public or statutory funds their position is analogous to that of public servants, and the Government could not in equity to the insured persons, on whom directly or indirectly the charge for medical service falls, treat them differently, unless they were satisfied that a higher rate than such considerations, taken alone, would warrant was necessary to attract and retain general practitioners in the numbers and of the type requisite for the provision of an efficient service. On these grounds, therefore, the Minister is unable to accept the alternative basis suggested by Prof. Bowley, and he considers that the principle of the Civil Service bonus may properly be applied as affording a useful indication of the extent of the reduction in the present capitation rate which the profession may reasonably be asked to accept. Concerning, indeed, the part of the capitation rate that represents an allowance for practice expenses, which have fallen substantially as the Committee recognise, the application of the Civil Service analogy to the reduction of the practitioner's gross income is favourable to the profession.

11. In the 1920 arbitration the whole-time income of a general practitioner was taken for certain purposes of discussion at £1800 gross, and this may conveniently be taken for the present purpose. The arbitrator's award was given in March, and, on the scale of bonus, applied to Civil Service salaries for the period beginning with that month, this total remuneration corresponds to a basic salary of £1177. Since Sept. 1st, 1923, when the last adjustment of the war bonus took effect, the basic salary of £1177 has produced a total remuneration of £1411. If the 11*s.* capitation rate is reduced in the ratio of £1800 to £1411 the result is a figure of 8*s.* 7½*d.* The considerations mentioned in paragraphs 6 and 7 above suggest, however, that the more appropriate starting-point is not 11*s.* in 1920 but 9*s* 6*d.* in 1922. If an 11*s.* rate leads to an income of £1800 per annum the corresponding income on the basis of the 9*s.* 6*d.* rate is £1555. This income was produced in January, 1922, by basic Civil Service salary of £1156. This basic salary now produces an income of £1386.* If a capitation rate of 9*s.* 6*d.* is reduced in the ratio of £1555 to £1386 the result is a figure of 8*s.* 5¼*d.*

12. An alternative method of calculation is to take the pre-war figure and adjust upwards. The actual pre-war capitation was 7*s.* plus the doctor's share of what is called the "floating sixpence." It has generally been assumed in discussing remuneration that this amount was on the average evenly divided between the chemist and the doctors, although in practice the apportionment varied considerably in different areas; and it is noted that in their memorandum the Committee take 7*s.* 3*d.* as an average pre-war figure. Assuming that the reasonable whole-time income of a general practitioner before the war was somewhere about £1200, the war bonus on the Civil Service basis would be an addition of about 18½ per cent., and on this basis the 7*s.* 3*d.* would become 8*s.* 7*d.* In considering these figures, it is to be borne in mind that the rate of bonus payable in the Civil Service for each period of six months is based on the average value of the cost of living figure for the preceding period of six months. The rates for the period from September, 1923, to February, 1924, are accordingly still affected by the higher values of the cost of living figure in March and April of the current year. It will be seen that all these bases of calculation produce converging results, which indicate that on the present level of prices there is a strong case for a substantial reduction of the present capitation rate of 9*s.* 6*d.*

13. The validity of the case put forward by the Committee—for the payment of a rate of not less than, or even more than, the 9*s.* 6*d.* at present in force—has also been tested by the second method employed in the 1920 arbitration. By reference, namely, to the number of attendances given under present-day conditions, affording an indication of the time occupied in attendance on any given number of insured persons, and thus a means of estimating the whole-time gross income to which a capitation rate may be considered roughly to correspond. A careful investigation has been made of the records of services rendered in 1922 by a number of practitioners in England and Wales selected as representatives of all types of practice, including both urban and rural, industrial and non-industrial, large practices and small. These investigations were limited to practitioners who were known to be keeping careful records, and the results covered 446 practices with aggregate total lists of 736,000 insured persons. The total number of records examined was 188,606, of which 122,931 related to men and 65,675 to women. A correction by way of addition has been made for the cards relating to persons who died after the end of the year 1922, and whose records were, therefore, not in the possession of practitioners at the time the examination was made. An addition has also been made in respect of cases of removal, since it appears that often the second doctor fails to make any record of attendances given before he receives the patient's card from the former doctor. Making a liberal allowance for these omissions the final figure shows that the average number of services rendered was slightly in excess of 3·5 per insured person. This means that a practitioner with 2000 insured persons on his list gave about 7000 services in the course of the year, which may be taken (as in the arguments before the arbitrators) as approximately 300 working days. On the average, therefore, the number of patients to be seen per working day was less than 24, and of this number at least two-thirds would attend at the surgery. In the case of men the actual ratio of visits to surgery attendances was as 98 to 227, and in the case of women the ratio was 66 to 232. If, therefore, for convenience the ratio for surgery attendances to visits is taken as being 2 to 1, it will be seen that this figure is distinctly favourable to the doctors. Thus the work entailed would be on the average about 16 surgery attendances and about eight visits per working day. Inquiry from experienced practitioners indicates that a practitioner giving this amount of attendance to insured persons would be able, without overwork, to devote at least as much time to private practice, an estimate which accords with the calculation submitted on behalf of the Government in the 1920 arbitration. Thus, assuming the private practice to be at least equally remunerative, a rate of only 9*s.*, yielding £900 per annum in respect of a list of 2000, may be taken as equivalent in the year 1922 to a whole-time gross income of £1800—the income named by the Insurance Acts Committee as offering a fair reward for the whole time of a general practitioner *in 1920*, allowing nothing for the fall in cost of living and practice expenses since that time.

14. Turning to the consideration of the allowance, if any, to be made in respect of contemplated changes in the conditions of service, the Minister appreciates the readiness which the Committee have shown in considering the suggestions which have been made by the Ministry and by the approved societies for the improvement of the service, and the value of the proposals which the profession themselves have made with the same object in view. He welcomes especially the growing recognition by the profession of the fact that the shortcomings of individual practitioners are prejudicial not only to their patients but to the efficiency of the service as a whole and to its status in the eyes of the public, and that provisions with a view to strengthening the checks on defaulters are desirable in the interest of the profession itself. The discussions of the conditions of

* It may be pointed out that, if the gross income were assumed to be derived wholly from panel practice, this figure produces substantially the amount of total net income postulated in paragraph 10 of the Committee's memorandum—viz.:—

Gross income	£1386
Deduct practice expenses (24/156) as per paragraph 7 of memorandum	213
	£1173

service in the last nine months have resulted in agreed modifications which there is every reason to anticipate will materially enhance the efficiency of the service, and the Minister acknowledges with pleasure the value of the contributions made by the profession towards this achievement. But the proposed amendments of the Medical Benefit Regulations, valuable as they are, have been mainly directed to a better and less ambiguous definition of the content of the service, rather than to its extension. As the Committee recognise in paragraph 12 of their Memorandum, the only new obligation which involves any real extension of the scope of the service is in regard to the administration of an anæsthetic or the rendering of other assistance in an operation outside the contract; and having regard to the relative infrequency of such cases under existing conditions the additional obligation thus entailed does not appear to the Minister to be such as to justify an appreciable addition on this account to the capitation fee. Nor does he find in other changes proposed such an addition on balance to the demands on a practitioner's time and work as would call for any appreciable addition to the remuneration.

15. In paragraph 13 the Committee comment on the reduction of the sickness benefit claims since the commencement of the Act, and they suggest that this is in the main attributable to the provision of medical attendance for all insured persons. The improvement in the health of the industrial classes which has followed the establishment of a system of national insurance must be a cause of deep satisfaction to all. But the Minister must in fairness point out that expenditure on sickness benefit is the resultant of a number of factors the effect of which cannot be separately estimated. Improvements in the administrative methods of approved societies and economic causes have contributed too largely to the reduction in the cost of sickness benefit to make it a safe index of national health or of the efficiency of the medical service. This is illustrated by the marked reduction during the war period which was probably due mainly to the abnormal demand for labour and can hardly have been due to the efficiency of the medical service, since the shortage of doctors made the maintenance of even a minimum service a matter of extreme difficulty. In any case, however, the point which the Committee raised is only revelant to the question of remuneration in so far as it might be shown that the reduction in the incidence of duration of sickness has been secured or accompanied by increased demands on the time and energies of the doctors. In fact, there is no indication of this, and the examination of practitioners' records, to which reference has been made in a previous paragraph, indicates that the number of services rendered is lower now than it was found to be when the inquiry was made, the results of which were utilised in connexion with the 1920 arbitration.

16. As regards the difficulties of rural practitioners in sparsely populated areas in England and Wales, the Minister has only within the last fortnight received the suggestions of the Committee, and has not been able as yet to give them the consideration which they need. The action which he may find it necessary to take to meet these difficulties will not, however, in any case effect the determination of the general capitation rate, with which this communication is concerned.

17. Reviewing as a whole the case put before him by the Insurance Acts Committee, the Minister is unable to find in it ground for any such increase as appears to be suggested of the present capitation rate. He is compelled indeed, after anxious consideration of the matter, to offer a substantially reduced rate, in order to avoid injustice to insured persons, on whom in one form or another the burden must fall if any payment were made in excess of what is reasonably necessary to secure an efficient and contented service. He fully recognises that, in the interest of insured persons, he must offer a rate bearing such a relation to the possible earnings of general practitioners as will enable insured persons to obtain, in connexion with medical benefit, the reasonably contented services of a sufficient number of practitioners, including those who by their professional efficiency and personal character especially command the confidence of the insured.

18. The main considerations by which his judgment must be influenced are, on the one hand, the weight that ought to be attached to the fall in the cost of living, and to the even greater fall in practice expenses (especially those connected with locomotion), and, on the other hand, any change in the demands on the doctor's time made by alterations in the conditions of service as well as by the number of attendances which efficient insurance practitioners have found it necessary to give in order to afford adequate medical attention to their insured patients. It has already been indicated that this second group of considerations do not, in the Minister's view, point to any addition to the rate of remuneration. So far indeed as comparative number of attendances is concerned, they might be held to justify some reduction.

19. On economic grounds, whether the circumstances of to-day be compared with those before the war or with those of 1920 or with those of 1922, the conclusion is inevitable that medical earnings must be expected to fall, without impairment to the recruitment of the profession, to a point which would in no case justify a capitation rate of more than between 8*s.* and 8*s.* 6*d.*, unless the rewards of insurance medical practice are to be deliberately placed at a higher level in comparison with those of private practice than heretofore.

20. The Minister observes that the Insurance Acts Committee, on behalf of insurance practitioners, suggest that the rate now to be fixed should operate for a period of five years, and he believes that such an arrangement would be beneficial to the service, and, therefore, very desirable in the interests of insured persons. He cannot, indeed, conceal from himself that a decision in this sense would increase his difficulty in estimating satisfactorily what is the proper rate to offer. The instability of economic conditions which has precluded his predecessors, in negotiations since the conclusion of the war, from making any long-term arrangement, intrinsically desirable as such an arrangement might otherwise appear to be, still operates, though in less degree, to make difficult any forecast of the course of prices and other relevant conditions throughout so long a period.

21. The Minister must differ from the Committee in the view they take of the probable course of prices. He cannot accept the suggestion in paragraph 11 of the Committee's Memorandum that the official index figures of the cost of living will tend to stabilise themselves at a little less than the present rate. Necessarily speculative as any assumption as to the future course of prices may be, the profession cannot reasonably expect, in the light of the experience of the last 12 or 18 months, that the probability of a further decline in prices should be wholly ignored.

22. Taking into consideration all the elements in a most complex problem, the Minister has come to the conclusion that he is justified in making to the profession an offer of 8*s.* 6*d.* per head for three years. If, however, the profession prefer a contract for five years, he is prepared to offer 8*s.* per head on such a contract.

23. The Minister would add that he has been impressed in the course of his discussions with the representatives of the profession and of the societies with the general desire for a development of the present general practitioner service into a medical service of the widest scope. With this desire he warmly sympathises, though on this occasion he has not felt able to deal with the question of development. In his judgment, however, that question is one which must be dealt with at the earliest possible moment. But consideration of it must necessarily raise the whole question of the National Health Insurance system, the financial position, the system of organisation gradually developed and the possibilities of improvement, the services provided and their cost, the case for development and the practicability of providing finance and personnel for such development. It is the intention of the Minister during the currency of the new contract to pray for the appointment of a Royal Commission to investigate these matters. It seems to the Minister that the report of such a Commission is a necessary preliminary to the framing of future policy as to the whole system, including the terms of service with the practitioner. Further, the Minister is deeply impressed with the desirability of avoiding repeated discussions of the character of those which have recently taken place in regard to the position and remuneration of the medical side of the service, as they must, in his view, militate against that mutual confidence and respect which should be the basis of the relationship between doctor and patient.

I am, Sir, your obedient servant,

W. ARTHUR ROBINSON.

The Minister of Health adds that the Secretary for Scotland as President of the Scottish Board of Health, after consultation with the appropriate Scottish bodies concerned, and after careful consideration of the position as regards Scotland, concurs in the terms of the First Secretary's letter, while matters such as mileage for Scottish doctors will be considered separately with the Insurance Acts Subcommittee (Scotland) of the British Medical Association.

2. THE REPLY OF THE INSURANCE ACTS COMMITTEE.

The following reply was sent on Monday last to the Minister of Health from the Insurance Acts Committee:

SIR,—1. The Insurance Acts Committee met on the 4th instant to consider the Minister of Health's reply to its case for the insurance capitation fee, contained in your letter of the 3rd instant. I am instructed to state that the Committee considers the reply of the Minister very unsatisfactory, not only in the offer which it finally makes, but in the manner in which that offer is attempted to be justified.

2. It appears to the Committee that, though in paragraph 2 the Minister states that he accepts unreservedly its

view that the rewards of medical practice should be such as to attract the right type of recruit to the profession and that the remuneration of insurance practice should not compare unfavourably with that derived from private general practice of a fairly comparable kind, he seems in the remainder of his reply to ignore both these aspects of this question. Instead of regarding the National Health Insurance system as a matter affecting the public health of the nation, he has apparently directed his attention mainly to the purely commercial question of what is the lowest sum for which medical attendance on insured persons can be obtained when they are ill.

3. The national aspects of the matter and the value of the practitioners' services in relation thereto are disregarded. The Committee, on the contrary, views the insurance medical service as having been set up not merely to assure medical attendance on certain wage-earners when they become ill, but to promote the national health by having regard to preventive as well as curative methods, by facilitating research into the beginnings of disease (for which such a service obviously offers unrivalled facilities) and for making such investigations and reports on health matters as the Ministry of Health might properly require. This work, even though some of it has not yet developed very far, has a bearing on the subject of remuneration; and in order that the growth of the service in these directions may be encouraged and not stopped it is necessary to attract to it and retain in it every type of practitioner from the new recruit into the profession to the experienced and successful family doctor of standing. To fix such a rate of remuneration as would tend to exclude the latter would deprive the service of very valuable members and would severely restrict that free choice of doctor by the insured population which is an essential feature of the scheme. It would militate also against that increase of numbers of insurance practitioners which alone will allow of the wide distribution of insured persons amongst doctors in such a way as to permit the best work to be done without any distinction between one class of patient and another. The Committee views with very grave concern any policy which might tend to hinder developments on these lines.

4. The Committee has no desire to ignore the relationship between the remuneration received from insurance practice and that from private fees or from contracts in which the State is not concerned as a party. Statements that such private fees yield a remuneration materially lower than that represented by the present capitation fee of 9*s*. 6*d*. will not stand investigation. There are, of course, some practices in which relatively low cash fees are accepted on account of the poverty of the people and the fact that they are without State aid. With these exceptions the Committee finds that, dealing with classes of the community from which insured persons are drawn, taking the lowest fees for each item of attendance that are accepted, ignoring such extra charges as are made for special services (e.g., night visits, fractures, minor operations, anæsthetics) included within the insurance contract, and assuming the same number of consultations and visits as occurs with insured persons, private fees work out frequently at 14*s*. 6*d*. per head, sometimes at 19*s*., and very rarely at less than 9*s*. 9*d*. Clubs are usually established because there is difficulty in paying for medical attendance at the usual private rates, and, being without State aid, are frequently accepted at rates below those of the National Health Insurance Service. Nevertheless, there are contract rates which vary from 15*s*. to 9*s*. 9*d*. in various parts of the country according to circumstances, and most of these are for a limited service (i.e., excluding special services such as those mentioned above), many require a health examination prior to admission as members, and some even exclude all cases of chronic illness.

5. Paragraph 2 of the Minister's reply speaks of the advantages of a contract system as obviating the risk of bad debts. The importance and extent of bad debts in connexion with private medical practice has been greatly exaggerated, mainly by representatives of approved societies in their endeavours to prove a case for a low fee. Except perhaps during the first year or two of a newly-established practice, such debts are relatively small. The report of Sir W. Plender on all kinds of practices contained in five typical towns puts them at 6½ per cent. or, including cost of collection, at 8 per cent. Relief from these is, of course, an advantage of contract work, but it must be remembered on the other hand that the great and growing body of restrictions on the independence of insurance practitioners set up by the regulations under the National Health Insurance Act, and the imposition of clerical and other duties not strictly medical, are regarded by many as far more than balancing that advantage.

6. The Committee cannot agree that anything contained in the Minister's reply affords a good reason for ignoring the claim that whatever may be regarded as the proper capitation rate should be provided as a first charge from the National Health Insurance Fund, which, as is shown by the Committee's memorandum on this subject, is well able to bear any such charge. This is not the same thing as trying to "justify an offer on the ground that it constituted the maximum charge which the available funds would bear." The Committee made no such absurd suggestion and would again refer the Minister to paragraph 3 of its memorandum and to the Committee's memorandum, drawn up on reliable expert investigation and advice, "The National Health Insurance Fund" a copy of which accompanied the Committee's case. Subject to much more detailed information than has up to now been vouchsafed to it the Committee would suggest that the statement contained in paragraph 3 of the Minister's reply—viz., "the liabilities under National Health Insurance increase with the ages of the insured persons and large reserves will ultimately be required to enable the claims to be met," requires much modification when applied to a national scheme which can depend on an unfailing supply of young lives. In view of the very inadequate way in which this part of its case has been met the Committee is not prepared to accept ex parte statements as to the possible demands on the Fund and insufficiency of the "real surplus." These the Committee finds quite unconvincing and asserts with confidence that the conclusions of the Committee's report, alluded to above, remain unshaken.

7. The Committee notes that in paragraph 6 the Minister to all intents and purposes throws over the arbitrators who accepted the thankless task of settling the fee in 1920. This is profoundly unsatisfactory to those who believe in a rational way of settling differences. It is also very ungracious to the arbitrators and to the then Minister, who, doubtless with due regard to the advice of the permanent officials, offered the same sum (11*s*.) as was afterwards confirmed by the arbitrators.

8. The suggestion is made in paragraph 7 of the Minister's reply that the reduction of 9*s*. 6*d*. in 1922 was received with equanimity by the profession, or at any rate acquiesced in without much sign of dissatisfaction, and this is supported by the statement that the number of new entrants into the insurance medical service did not fall off but even increased. The increase in the first quarter of 1922 was in all probability largely due to doctors who had left war employment and settled into general practice. But the Minister's argument entirely ignores the elementary fact that in industrial and rural areas, so long as a panel system exists, new entrants into practice *must* join it. The Committee would remark that the fact that the size of panel is almost invariably mentioned in advertisements of practices for sale as an inducement to purchase, has no such significance as that implied by the Minister. It has always been usual for men desiring to sell practices to give some indication of the amount derived from their settled appointments and contract work and there is no special or preferential goodwill attached to insurance practice.

9. The Committee takes strong exception to the statement made at the commencement of paragraph 8. At no time has the Committee, either explicitly or implicitly, asked that "doctors should be entitled to such remuneration as will secure them against any lowering of their pre-war standard beyond that entailed by increased taxation." Reference to the Committee's case (paragraph 10) will show its contention to be that even if the capitation fee were 10*s*. 9*d*. the expenditure of the insurance practitioner would have to be reduced to 16 per cent. below what Prof. Bowley argues would be proper if "the standard of living is not to be seriously lowered." If the 8*s*. 6*d*. were accepted the standard of living of the insurance practitioner would have to be reduced to 25 per cent. below the pre-war standard. It is noted that the Minister's reply declines to discuss the careful reasoning of Prof. Bowley. No reason is assigned for this reticence and the Committee will not indulge in surmise. The medical profession is quite willing now, as it always has been, to take its fair share in any sacrifices required by national circumstances, but it believes that the arguments it has put forward, supported by the analysis of Prof. Bowley, justify the profession resisting the reduction in its standard of living to the extent that the Minister is endeavouring to force upon it.

10. The Committee cannot deal with the arguments set out in paragraphs 11 and 12, because, so far as it is able to understand them, it appears as if the Minister was comparing the gross income of the medical practitioner with the net income of the civil servant. The Committee is, indeed, unable to admit the validity of the greater part of the arguments in these paragraphs at all. The £1800 that was taken as a basis for certain arguments in the 1920 arbitration was a maximum gross income and appears to be entirely out of place in the connexion in which the Ministry uses it. The only line of comparison with the civil servant which appears to be useful or, indeed, to have any relevance is that adopted in the table of Prof. Bowley's memorandum. It is here repeated with such modification as is necessary.

PROF. BOWLEY'S TABLE.

—	1914.	March.				July, 1923.*	
		1920.	1921.	1922.	1923.		
Amount	£500	£819	£905	£758	£696	£696	£684
Relative numbers	100	164	182	152	139	139	136
Amount	£1000	£1544	£1690	£1330	£1234	£1234	£1219
Relative numbers	100	154	169	133	123	123	121
Doctor's rate per patient	7/3	11/–	11/–	9/6	9/6	9/6	8/6
Relative numbers	100	152	152	131	131	131	117
Official cost of living index	100	230	241	186	176	169	173
Estimated middle-class expenditure	100	161	—	—	—	157	—

* Rates as just become operative for civil servants and proposed for doctors.

The table shows that though the doctor's relative rise of remuneration never reached the height of the civil servants, the Minister's new proposal will leave it lower. Moreover, as Prof. Bowley points out, the doctor is at a great disadvantage with the civil servant when making adjustments of his expenses and way of life. It appears also to the Committee that the civil servant's pension has been overlooked in stating the Minister's case.

11. With reference to paragraph 13 of the Minister's reply, the figures which the Committee has collected with great care show a somewhat higher number of items of service than that shown in the reply. The Committee notes, moreover, that though adjustment has been made in the Minister's figures for cases of death and removal, no adjustment has apparently been made for those who have ceased to be insured. Further, the Minister assumes that a practitioner with a list of 2000 insured persons, who, in most cases, would be practising in a poor industrial area, has not only time but also opportunity for doubling his income by private practice. It is submitted that in the case contemplated this would not be possible. A fairer instance, however, would be to take the case of a practitioner with the average list of 1000. This would produce at 8*s.* 6*d.* roughly £425 a year. As the insured population is more than one-third of the total population of Great Britain, less than two-thirds remain as the field for private work. From this two-thirds there have to be deducted, first, the day-to-day population of such institutions as workhouses, asylums, hospitals, prisons, and orphanages, together with naval and military establishments, &c.; and secondly, such medical attendance as is provided by public authorities, such as that given at infant welfare and school treatment centres. Further, in this sphere the practitioner concerned has to share the opportunities of practice with that large number of other private practitioners who are not engaged in the insurance service. The case would be more fairly stated if we allow to the average doctor with 1000 insured persons on his list an opportunity of earning a similar amount to this from private work. This brings the total income of the average insurance practitioner not to the £1800 required by the Minister's argument, but to less than half that sum.

12. The Committee thanks the Minister for his appreciation of its readiness to initiate improvements in the service and to accept suggestions for this purpose coming either from the Ministry or from the approved societies. The testimony of the Minister is all the more valuable in view of the ostentatious lack of appreciation shown by the approved societies. The Committee must point out that it did not ask for an evaluation of the additional services which will fall on practitioners under the contemplated changes in the conditions of service. It cannot, however, admit that these new services are of small value, indeed some individual practitioners, and the practitioners in some areas, will probably find the additional services rather onerous.

13. In paragraph 15 the Minister speculates as to the probable causes of the reduction of the sickness benefit claims. The Committee is quite willing to agree that many factors have combined to bring about this happy state of affairs, but no medical man who has examined this question has any doubt that one of the chief factors (and probably *the* chief factor) is the ability of a large section of the population to take advantage of medical advice at an early stage of an illness without any fear of contracting a doctor's bill. The Committee views with some alarm the hint given in paragraph 15 and the last sentence of paragraph 18 to the effect that if by improvements in medical education and skill or by the extension of the preventive side of medicine the number of individual items of service rendered could be reduced, this might be held to justify some reduction in the pay of those who were instrumental in thus conducing to the health and comfort of the insured population and the improvement in the national health. This is, indeed, a striking example of the defect in the Minister's reply to which the Committee has drawn attention in paragraph 2 of this letter.

14. The Committee is in doubt whether it understands the suggestion made in the middle of paragraph 17 of the Minister's reply, where it is suggested that unless the capitation rate is substantially reduced some injustice will be inflicted on insured persons. If this paragraph is meant to suggest that an increase on the 8*s.* 6*d.* offered would mean that the insured person must pay an increased contribution the Minister has quite misunderstood this part of the Committee's case. The Committee maintains it has established that the National Health Insurance Fund is in such a healthy condition, owing to windfalls of various kinds as well as to unexpected reductions in the cost of sickness benefit, that it can quite easily afford to pay the doctor the present capitation rate, or even more, without calling on the insured person or the employer or the State to make any increased contribution, and without depriving the insured person of any additional benefit to which he is at present entitled. It would be a poor consolation to the insured person if a discontented and therefore less satisfactory medical service was forthcoming, even though by the reduction of the capitation rate the approved societies were enabled to declare some additional benefit.

15. The delay in sending suggestions with regard to the different conditions of rural practitioners was due to the fact that the Committee is waiting for the appointment of the small joint committee suggested by Sir Arthur Robinson at the interview with him on Sept. 20th. The proposals mainly of a general character, already submitted, are, of course, subject to the opinion arrived at after the deliberations of such a joint committee, and it is hoped that there will be no further delay in proceeding with this matter. This is an essential part of any settlement.

16. The Committee desires briefly to summarise its case. It has done its best to find out the alleged defects in the National Health Insurance system, and to accept, or itself to suggest, the remedies. The National Health Insurance Fund is at present well able to provide the proper capitation fee for the standard of service required. The proper fee is to be found most simply by calculating what is the present value of the 11*s.* offered by the Ministry in 1920 and confirmed by arbitrators; so far as the Committee can ascertain, with the best expert advice at its disposal, that sum is somewhere between 10*s.* 4*d.* and 10*s.* 9*d.* The Committee was willing to be convinced that its calculations were wrong if this could be demonstrated, but the Minister's reply has not shown the Committee that its calculations were wrong. Nevertheless, though convinced that the fee mentioned above is an equitable one, the Committee has indicated that in view of all circumstances the essential point is that there is no justification for reducing the present amount of 9*s.* 6*d.*

17. As the Committee informed the Minister at its interview on the 2nd instant, its duty is to report to the Local Medical and Panel Committees, which will instruct representatives who will attend at a conference on the 18th instant. The decision as to the acceptance of the Minister's offer rests in the hands of that conference but the Committee has had no hesitation in making the following recommendations:—

(*a*) That the offer of the Minister of 8*s.* for five years be definitely rejected.

(*b*) That the offer of the Minister of 8*s.* 6*d.* for three years is inadequate and that arbitration upon the lines of that of 1920 be asked for.

(*c*) That in the event of such arbitration being refused, the offer of 8*s.* 6*d.* for three years be definitely rejected.

(*d*) That any agreement with the Ministry on the question of the capitation fee be subject to agreement being arrived at with regard to the special circumstances of rural practitioners.

If the Minister is able to express any definite views as to the propriety of arbitration on the lines indicated, it would

be of the greatest value and convenience if the Committee could be put into possession of these prior to the meeting of the conference.

18. During the whole of this year with a view to the present negotiations the Committee has been striving for a settlement by consent and for the cultivation of friendly relationship with representatives of approved societies and others interested in insurance administration. It sincerely believes the service needs a period of tranquillity in order that it may have a chance to develop. But the Committee feels that that period of tranquillity is not likely to be gained by the acceptance of an offer which insurance practitioners will regard as inadquate both in itself on economic grounds and as tending to hinder the progressive usefulness of the service to the nation. The Committee fully recognises the very difficult nature of the decision which the Minister is called upon to make and his evident desire to act fairly and impartially.

19. The Committee would very seriously direct the Minister's attention to what will undoubtedly be the effect produced on the average insurance practitioner's mind by the reduction now proposed. Knowing as he does the immense amount of time and trouble his representatives have taken to find out the defects in the system and remedy them, and to suggest ways and means whereby the service may become one of which the nation and the medical profession may feel proud, the practitioner will be struck with the fact that the net result of it all is a proposed reduction in a fee which has already been reduced, without any expert inquiry, by 1*s.* 6*d.* per head per annum from the 11*s.* allowed by arbitration. He will also note that the reduction has been brought about largely at the instigation of the approved societies, who, because they are the agents of the State through whom sickness and maternity and certain additional benefits are paid, claim a deciding voice in the determination of what the medical profession should be paid for their part in what is supposed to be a national service. The result of his examination of the position will be discouraging. He is not likely to be at all hopeful of the service ever becoming a really national one untrammelled by associations with bodies whose interests it is only too plain are concerned much more with the building up of surpluses than with the building up of a satisfactory National Health Insurance scheme which shall be preventive as well as curative.

20. The Committee entirely shares the view of the Minister that repeated discussions of the kind which have recently taken place are not in the interest of the medical profession, the public, or the National Health Insurance system, and it would make many sacrifices to avoid such discussions. It therefore welcomes the statement of the Minister that at an early date the whole question of the National Health Insurance system must be inquired into. Such an inquiry would, however, be likely to have an outcome much more useful to the country if it were set up after a period of several years during which the system had worked smoothly and without interruptions caused by war, immediate post-war conditions, or disputes as to remuneration, and the Committee hopes that the Minister may even yet be able to make an offer which the Committee could recommend for acceptance to its constituents. The Committee has every wish to help towards a peaceful solution.

I am, Sir, your obedient servant,

ALFRED COX,
Medical Secretary.

The representatives of the Local Medical and Panel Committees will have, therefore, before them at the conference to be held on Oct. 18th the important issues in a concrete form.

ST. MARY'S HOSPITAL MEDICAL SCHOOL: POST-GRADUATE COURSE.

(*Concluded from p. 806.*)

ON Oct. 1st, at 11 A.M., Mr. ALECK BOURNE discussed in a paper, which was illustrated by lantern slides, the

Anticipation of Mechanical Difficulties in Labour.

He stated that his findings were deduced from the study of the records of over 2000 labours in Queen Charlotte's Hospital. He believed 90 per cent. of stillborn births to be due to instrumental delivery, and he hoped that by careful antenatal diagnosis this percentage would be largely reduced. Neglecting fœtal causes and dealing only with the maternal aspect, he advised three main methods for the detection of probable mechanical difficulties: (1) The taking of a careful obstetric history; (2) measurement of the pelvis; (3) estimation of relation of head to brim at the thirty-sixth week. He laid stress on the tendency of the weight of the fœtus to increase in multiparæ shown by the necessity for craniotomy in the later pregnancies of some women whose previous children had been delivered by means of forceps. He urged that even apparently normal measurements could prove fallacious, and showed slides of generally contracted pelves, and those which were generally contracted and also flat, where apparently normal measurements were present. He considered the posterior interspinous diameter to be valuable, since it gives an indication of the measurement of the basin of the pelvis proper, and showed tables demonstrating the possibility of error resulting from reliance on measurements alone. As to the relation of head to brim at the thirty-sixth week, if (*a*) the head was engaged, it would always go through; if (*b*) the head was engaging, Mr. Bourne advocated firm pressure from the shoulders for 10 seconds or more to convert (*b*) into (*a*). With fat or intolerant patients an anæsthetic might be necessary. If (*c*) the head was floating above the brim, it would usually be extended and high up, towards the umbilicus. The treatment would be influenced by the obstetric history, but in many cases he advised induction at thirty-sixth week and close observation. If the major diameter of the head began to engage, and if overlapping began to be reduced, the patient could be left to go on with labour. If not, Cæsarean section would be indicated.

Dr. WILFRED HARRIS gave a lecture on

Encephalitis Lethargica.

After differentiating acute encephalitis and anterior poliomyelitis from encephalitis lethargica, he recalled the fact that the last-named disease was first recognised in 1917, when owing to the frequency of bulbar symptoms it was for a while confused with botulism. Attacks started with soreness of the throat and difficulty in swallowing, accompanied by bilateral ptosis, diplopia, and sluggish pupils—in fact, ophthalmoplegia, both external and internal. He emphasised that, in spite of the name "lethargica" and the sleepy appearance of the patient owing to the ptosis, one of the most troublesome symptoms of this disease was insomnia. Only in a very advanced case was coma present, and the patient usually replied to questions quite rationally though slowly. Certain authorities had estimated the mortality as high as 40 per cent., but Dr. Harris failed to agree with this view. From his own experience of over 100 cases he would have put the mortality as about 10 per cent. In the early cases there was absence of headache; the pulse-rate was not usually disturbed, but where it was raised to 120 or so the prognosis was always grave. The diagnosis was simple with bilateral ptosis present, otherwise it was easy to miss. Sluggish and perhaps unequal pupils were helpful points. The disease was often more like tuberculous meningitis than any other condition, particularly in adults. Incidentally, a common mistake was to forget that tuberculous meningitis did occur in adults of varying ages; among his own cases he had had patients up to 60 with this disease. Lumbar puncture was of no assistance, except from the point of view of eliminating other diseases; it gave little help in the differential diagnosis from tuberculous meningitis, since a lymphocytosis was common, and a leucocytosis sometimes occurred. Completely negative lumbar punctures did occur occasionally in tuberculous meningitis, which disease was invariably fatal. Relapses might occur in encephalitis lethargica, and sometimes stiffness, going on to clonic spasms of muscles, persisted for weeks or months afterwards. The typical paralysis agitans mask-like face and rigidity of limbs was one of the sequelæ which once seen was never forgotten. As a rule, there was no tremor. Whereas paralysis agitans had a hopeless prognosis, with a gradual downhill path, the prognosis of the paralysis agitans type of encephalitis lethargica was different.

Slight cases might recover completely, and more severe cases got no worse. The exception to this was in the rare instance of mask-like rigidity, &c., coming on some months after the original lesion. This was of very bad prognosis. The treatment was that of symptoms as they arose. Urotropin was given with the view that it disinfected the cerebro-spinal fluid, but it was doubtful if it affected the disease in any way. For insomnia, failing bromides, Dr. Harris used medinal in 5, 7, or 12 gr. doses daily.

Dr. E. GRAHAM LITTLE dealt with the

Diagnosis of Some Common Diseases of the Skin,

showing numerous cases. He discussed the nomenclature of skin diseases with special reference to eczema, which was really only a clinical term of convenience. Dermatologists, both here and abroad, had at intervals endeavoured to re-classify and describe skin conditions. Hence, the confusion of mind which often attended the study of manuals on this subject. He preferred the classification of eczema ("an exudation which when dry stiffens linen") into: (*a*) Eczema of external origin—e.g., from exposure to excessive cold, or various forms of heat, &c.; (*b*) eczema of internal origin arising from some constitutional cause, due to special sensitisation on the part of the individual to specific bacterial poisons. Eczematoid ringworm deserved mention; it occurred in the groins and extremities—most commonly it started in the toes and might exist there for years before spreading elsewhere. It was frequently indistinguishable from true eczema. Infantile eczema, reported by the mother as due to teething, was common in the first three months of life, and had no connexion with dentition. Its origin was rather in exposure to wind, sun, or cold, combined with dietetic errors and incessant feeding. Babies subject to this condition were generally fat and too heavily clothed. Treatment consisted in restriction of starches, in regular meals, and fewer clothes. Eczema in old people called for special care in treatment, as their skin was particularly sensitive. Diabetic eczema, common about the genitals and groins, cleared up with elimination of sugar from urine. In the general treatment of eczema of internal origin it was advisable to search for foci of infection in teeth and tonsils. *B. coli* and *paratyphosus* and fæcal streptococci were often responsible, and vaccines were remarkably successful in some cases. Other cases responded to fasting and purging on a somewhat heroic scale. Dr. Little ordered Glauber's salts ℥x to be taken fasting in one pint of water first thing in the morning, and another pint or 2 pints of water during the first hour afterwards. This was followed by a complete fast, water only being allowed for 24, 36, or 48 hours according to the endurance of the patient. Lichen planus responded to this treatment like a charm. As to local treatment, for wet eczema he favoured wet dressings, such as saturated ac. boric dressings, or lotion of zinc sulphate and copper sulphate, aa gr. ii. aq. ad ℥i. For small patches silver nitrate 2 per cent. applied b.d. was often useful. After exudation had gone down, he believed in crude coal-tar ointment. This was specially useful for children. A common mistake was to put too heavy dressings on eczema, whereas small thin dressings to keep the eczema cool were indicated. Cold boric starch poultices were the most soothing of all applications. Dr. Little then described and showed cases of various forms of Lichen Planus.

Prof. F. LANGMEAD discussed

Some Functional Disorders in Young Children,

referring especially to three common functional disorders which often made a child's life miserable: (1) Nocturnal enuresis; (2) light terrors; (3) infantile convulsions. In *nocturnal enuresis* careful examination of the urine must be carried out to eliminate organic disease such as renal calculus, *B. coli* infection, highly acid urine, &c. Occasionally nocturnal epilepsy was found to be the unsuspected cause of nocturnal enuresis. It was advisable in cases found to be functional to classify children into: (1) The dull, apathetic, stupid, lethargic child; (2) the bright extra-intelligent scholar. Of these two classes Prof. Langmead thought the second variety was most commonly responsible for the children with enuresis. Treatment consisted first and foremost in the importance of training. The child should be held out at regular intervals during the first six months of his life, and excellent results would ensue. Highly acid urine should be alkalised. Tea must be prohibited. The child should sleep on a hard bed with plenty of fresh air in the room, when a slight stimulus to micturate would be more likely to wake him. As to drugs, in class 1 thyroid was beneficial, in class 2 belladonna pushed to toxic effects—i.e., dilatation of pupils in combination with bromides was advocated. *Night terrors* often depended on excitement just before bedtime, and over-fatigue and adventures in the daytime. The variety where the child did not remember his dreams on awaking was comparatively harmless. But the child who afterwards was aware of what happened during the night was liable to get a permanently damaged brain. Treatment consisted in elimination of excitement, never, in Prof. Langmead's opinion, in psychotherapy. *Infantile convulsions* and infantile eclampsia were really synonymous with epilepsy. Family history was of great assistance. Damage by forceps delivery, mental deficiency, intestinal disturbance, worms, and fevers had to be considered before one could term this condition functional. He particularly wished to warn his audience against prognosis in this class of case. The drug he found most successful in treatment was chloral hydrate gr. ii. pushed two hourly till the child became drowsy. Sometimes when this failed luminal gr. ½ b.d. was beneficial.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

University of Edinburgh.

IN the teaching of medicine and surgery in the Edinburgh University School a new plan has been adopted for all students who have yet to pass the pre-registration examination. It has been felt for some time that the old arrangement, whereby medicine and surgery were taught quite separately, respectively in the third and fourth winter, tended to give the student the impression that the two subjects were completely isolated, and it is hoped by the new scheme to give him a truer perspective of their essential inter-relation. Under the new curriculum, third-year students during the autumn term will receive, in addition to pathology and materia medica, a course of lectures in systematic medicine and an introductory course of clinical medicine, while in the spring term these will be replaced by similar courses in surgery. In the fourth year the students are to be divided into three groups: a medicine group, a surgery group, and a special subjects group (eye, ear, nose and throat, and skin diseases). In each of the three terms the student will change his group. In the spring term the systematic medicine lectures will be completed and in the summer term the systematic surgery lectures. In the fifth year a midwifery group replaces the special subjects group. The advantages of this scheme over the old one are fairly obvious. They should enable the student to advance his knowledge uniformly right up to the final examination.

Prof. J. J. R. McLeod (Toronto) will deliver the Cameron prize lecture in the University on Oct. 16th.

At a meeting of the Senators on Thursday, Oct. 4th, Prof. Thomas Jones Mackie, former Wernher-Beit professor of bacteriology, Cape Town University, was installed in the Irvine Chair of Bacteriology, left vacant through the death of the late Prof. James Ritchie.

Post-Graduate Medical Teaching in Glasgow.

The syllabus for winter session has now been issued. The scheme falls into three groups: Weekly demon-

strations, special courses, and clinical assistantships. The series of demonstrations on Wednesday afternoons has been arranged on similar lines to those of former years. The range of subjects is a wide one—including medicine, surgery, obstetrics, and a number of special subjects. Demonstrations will be held each Wednesday afternoon at 4.15 from Nov. 7th, 1923, till May 28th, 1924, inclusive. In order to provide opportunities for more intensive and systematised post-graduate study, there have been arranged some special courses, dealing, for the most part, with two or more allied subjects. These include a course on the Mother and the New-born Infant, in which Prof. J. M. Munro Kerr, Dr. Leonard Findlay, Dr. D. Shannon, Dr. Jas. Hendry, and Dr. J. N. Cruickshank will take part. A course on Genito-Urinary Surgery, under Mr. M. Logan Taylor, Mr. J. Mill Renton, Mr. W. W. Galbraith, and Mr. J. G. McGregor Robertson; a course on Medical Ophthalmology conducted by members of the staffs of the Eye Infirmary, the Ophthalmic Institution, and the general hospitals; a course on Fractures, conducted by Mr. George H. Edington and Mr. Charles Bennett; and a course on Surgical Diseases of Children, by Mr. Alex. MacLennan.

Graduates who wish to enrol for any of these special courses or to become attached to wards or out-patient departments as clinical assistants, should communicate with, and pay their fees to, the Secretary, Post-Graduate Medical Association, The University, Glasgow.

The Morison Lectures.

The Morison lectures will be delivered on Oct. 15th, 16th, and 17th by Dr. Alexander Blackhall-Morison in the hall of the Royal College of Physicians, Queen-street, Edinburgh, at 5 P.M. The subject is: The Progress of Neurology, Psychology, and Psychiatry during the Century since the Foundation of the Lectureship.

THE LONDON MEDICAL EXHIBITION.

BOTH from the point of view of the number and variety of medical and surgical exhibits and from the large attendances, including many foreign medical visitors, the thirteenth London Medical Exhibition, which was held at the Central Hall, Westminster, from Oct. 1st to 5th, was an unqualified success, and that is saying much; but it also afforded a very practical indication of the rapid strides which medicine and surgery are making and the way in which manufacturers are endeavouring to supply the needs entailed by that progress. This was shown in the departments of electrical therapeutics, organotherapy, as well as in the direction of the new insulin treatment and the requirements involved in the "defatting" of bacteria. To fully describe all the exhibits of fine chemicals, surgical instruments, dental and optical appliances, and so forth, to mention only a part of the large field covered by the exhibition, would be impossible in the space at our disposal; but a brief summary of the chief features will show how rapidly the industrial part of scientific research has been organised since the war. Neither is any satisfactory classification of the exhibits possible, for commercial firms frequently represent more than one department of medicine or surgery. Roughly, however, the exhibition may be divided into drugs and food, instruments and appliances, milk, as being a special article of food, spas and waters, and medical books.

Drugs and Foods.

In the drug section Insulin attracted much attention. Allen and Hanburys, Ltd., of Lombard-street, London, E.C., Vere-street, W., and Wigmore-street, W., in addition to their surgical instruments, preparations for venereal treatment, organotherapeutic products, a new series of indicators for the colorimetric evaluation of hydrogen-ion concentration and for titrations, foods for infants, and diabetic flour, displayed Insulin A.B. Brand in vials of 5 c.cm. and 10 c.cm. In connexion with this new remedy a special set of apparatus and reagents for the estimation of blood-sugar by the Maclean method was shown, while for the benefit of the general practitioner who has little opportunity for keeping himself abreast of the most modern technique, special demonstrations were given almost continuously throughout the course of the exhibition and were remarkable for their crowded attendance.—Burroughs, Wellcome and Co., Snow Hill Buildings, London, E.C., also made a special feature of Insulin, and 11 stages in the Wellcome brand of the preparation from the ox pancreas to the finished product were shown. Preparations of the various glands for the production of the large assortment of tabloids which this firm make were exhibited, and maps and diagrams formed a very instructive and valuable exhibit. Particular stress was laid upon the use of Kharsivan and Neokharsivan in syphilis, yaws, and tropical ulcer; upon tabloid preparations for malaria; Moogrol for leprosy; and Soloid Antimony Tartrate for bilharziasis, kala-azar, and oriental sore.—Boots Pure Drug Company, Ltd., Nottingham, also demonstrated the blood-sugar test of Maclean, and exhibited a very large selection of synthetic chemicals, compressed tablets of medicinal drugs and chemicals, and pharmaceutical preparations in great variety. Chloramine T., Chloramine T. Surgical Paste, and Dichloramine T. were prominent exhibits, as were Flavine antiseptics and a fine selection of research chemicals.—Anglo-French Drug Co., Ltd., 238a, Gray's Inn-road, London, W.C., showed their Diabetylin for the treatment of diabetes mellitus without the withdrawal of carbohydrates from the dietary; Dimol, an intestinal disinfectant, Galyl for the treatment of syphilis, and many other pharmaceutical preparations, as well as the neoplastic reaction outfit for the differential diagnosis of cancer by the method of Thomas and Binetti.—The British Dyestuffs Corporation, Ltd., 70, Spring-gardens, Manchester, staged a fine selection of dyestuffs for medicinal use, microscopical stains, and materials for biological use. Euflavine, which this firm showed, is a neutral derivative of acriflavine, non-irritant even in concentrated solution, and is used in the treatment of gonorrhœa, infective skin diseases, and as a dental antiseptic.—Crookes Laboratories, 22, Chenies-street, London, W.C., exhibited in an attractive manner their colloidal drugs for medicinal use, and the "Brownian" activity of these preparations was strikingly shown under the microscope by dark-ground illumination. Among these drugs were Collosol Argentum, iodine, sulphur, and calcium, but special attention was drawn to Collosol Kaolin—a comminuted neutral powder in a very fine state of subdivision prepared by the precipitation of a colloidal suspension of china clay with the addition of 1 per cent. agar-agar. The claims for it are that it forms an adherent coating on the bowel wall, thus protecting the surface from irritant particles and digestive juices, an action which has led to its use in ulcerative colitis; secondly, that it possesses a remarkable power of adsorbing certain poisons, more particularly bacterial toxins, while not destroying micro-organisms or in any way affecting ferment action.—British Alkaloids, Ltd., 104, Winchester House, London, E.C., showed T.C.P. (trichlorophenyliodomethylsalicylic acid in H_2O), a germicide analgesic, antithermatic, keroplastic, non-hæmostatic, non-toxic, and non-caustic claimed to have high destructive germ action with a vitalising action on phagocytes.—British Organotherapy Co., Ltd., 22, Golden-square, London, W., attracted much attention by their complete range of monoglandular products, as well as by the polyglandular compounds, lymph serum, lymphoid compound, Ova Mammoid Compound, Ovatmine, and Pancreatokinase. The company also exhibited Sacchromycin, Anisothermal, isotonic and living yeast specially prepared for use in medical practice.—Angier Chemical Co., Ltd., 88, Clerkenwell-road, London E.C., exhibited Angier's Emulsion, each fluid ounce of which contains 33⅓ per cent. of specially purified petroleum, and 9 gr. of combined hypophosphites of lime and soda with chemically pure glycerine.—Anglo-American Oil Company, Ltd., Albert-street, Camden Town, N.W., made a special feature of Nujol and Mistol, the former being an intestinal lubricant and the latter a solution of menthol, camphor, and eucalyptol in pure liquid paraffin indicated in catarrhal conditions of the mucous membrane of the nose and throat. It has also been found useful in the relief of hay fever.—The G. W. Carnrick Co.'s Standardised Gland Products (Agents, the American Drug Supply Co., Ltd., 40–42, Lexington-street, London, W.), exhibited dried extracts and powders of gland substances—Hormotone for menstrual and menopausal disorders, neurasthenia, &c., Trypsogen for diabetes mellitus, Secretogen for gastro-intestinal disorders, and Kinazyme as an aid to metabolism in tuberculosis, malnutrition, &c. All these products undergo a special laboratory test.—At the stall of Denver Chemical Manufacturing Co., London, E., Antiphlogistine, the well-known hygroscopic antiseptic poultice, was prominently displayed. Composed of anhydrous and levigated argillaceous mineral, pure glycerine, compounds of iodine, minute quantities of boric and salicylic acids, and the oils of peppermint, gaultheria, and eucalyptus, it is non-irritating and non-toxic,

keeps in any climate, and is indicated for use in inflammatory and congested conditions.—Endocrines, Ltd., 72, Wigmore-street, London, W., showed a wide range of pluriglandular preparations, among 33 formulas being Adreno-Spermin Co., Thyro-Ovarian Co., and Pan Secretin Co.—C. J. Hewlett and Son, Ltd., 35–42, Charlotte-street, and 83–85, Curtain-road, London, E.C., among a large display of pharmaceutical preparations, showed their Antiseptic Cream, Hæmorrhaline (Ung. pro Hæmorrhoid), Hormonigen tablets containing the hormones of the thyroid, pituitary, ovary and testis, Ung. Iódermiol, prepared with lanoline and containing 5 per cent. of iodine, Liquor Santal Flav. c. Buchu et Cubeba, as well as improved surgical instruments, &c.—Laboratorie des Produits "Usines du Rhone" (Agents, Dick, Coates and Co., 41, Great Tower-street, London, E.C.), exhibited a wide range of pharmaceutical specialities, including Alunozal, ani ntestinal antiseptic; Asciatine, an antineuralgic, Scurenaline, a synthetic adrenalin; Scurocaine, a local anæsthetic; and Scuroforme, a local and internal anæsthetic.—Maltine Manufacturing Co., Ltd., 9, Holborn Viaduct, London, E.C., made a display of their well-known preparations of Maltine and Maltoline, the first containing the nutritive elements of wheat and oats, in addition to those of barley, and the second a combination of maltine, olive oil and phosphorus as an efficient alternative to cod-liver oil compounds.—Menley and James, Ltd., Menley House, Hatton-garden, London, W.C., called attention to their therapeutically active iodine in various forms.—W. Martindale, 10, New Cavendish-street, London, W., showed a wide range of medicinal preparations, including Aspriodine, a compound of aspirin and iodine, for use in asthma, enlarged glands, and arteriosclerosis; Emetine Periodide, which is relatively non-toxic and indicated in amœbic dysentery, as well as vaccines and reagents for microscopic research, blood-sugar estimation, and so forth. Attention may also be called to sodium chaulmoograte. Chaulmoogric has been fractionated by this firm into two main groups for internal and hypodermic use respectively in the treatment of leprosy and tuberculosis.—May and Baker, Ltd., Battersea, London, S.W., called special attention to stovaine solution in ampoules for spinal and local anæsthesia. It is claimed to be as effective as cocaine, while possessing about one-third of its toxicity. A large selection of antisyphilitics was also included in the exhibit of this firm, as well as general and local anæsthetics.—F. Newbery and Sons, Ltd., 27–28, Charterhouse-square, London, E.C., Cardiff and Liverpool, presented, in addition to Valentine's Meat Juice Phospho-lecithin (Wampole), a nerve food, reconstructive tonic, and protoplasmic regenerator of nerve tissue. Each dessertspoonful contains: sodium glycerophosphate, 2 gr.; calcium glycerophosphate, 1 gr.; potassium glycerophosphate, 1 gr.; strychnine glycerophosphate, 1–250 gr.; lecithin, 1–8 gr.; avenine, 1–120 gr. Bromo soda, which we have elsewhere stated agrees better than the potassium salt with some stomachs, is a bromide of sodium with caffein in granular form; and Ingluvin, the essential principle of the gizzard, for use where pepsine refuses to act, were other Wample preparations shown by this firm, who also exhibited Trommer Co.'s preparations, among others being their well-known elixir, malt, malt with cod-liver oil, and hypophosphates, pepsine, petroleum, and with cascara sagrada. An elegant and useful preparation also shown was pill cascara cathartic (Warner).—Oppenheimer, Son, and Co., Ltd., 179, Queen Victoria-street, London, E.C., in addition to Roboleine, the "A," "B," "C" vitamin diet, containing animal fats, maltose, diastase, natural nitrogenous and phosphoric compounds, with the "A," "B," "C" vitamins, made a special feature of organotherapy products, and their medicinal remedy for asthma Grindeline, each drachm of which contains: grindelia robusta liq. ext. (O.S. and Co.), ℥ 15; potassium iodide, gr. 2; trinitrin, gr. 1–200; euphorbia pilulifera tinct., ℥ 20. This firm supplies free to medical men a useful little pamphlet giving brief notes on the history and therapeutic uses of these drugs.—Parke, Davis and Co., 50, Beak-street, London, W., exhibited a wide range of pharmaceutical preparations. Among protein extracts for diagnosis there were more than 100 specific proteins (foods, pollen, hair, feathers, wool, bacteria, &c.), while among glandular preparations in the form of tablets were to be seen orchic compound, ovarian compound, suprarenal compound, thyorchic compound, and thyrovarian compound. A feature was also made of the vaccines prepared at St. Mary's Hospital, anti-catarrh and mixed vaccine for colds and mixed vaccine for bronchial asthma.—Charles H. Phillips Chemical Co., Acton Vale, W., displayed Milk of Magnesia and Phospho-muriate of Quinine Compound.—Sandoz Chemical Co., Ltd., Canal-road, Bradford, introduced to the notice of visitors their several preparations of Felamine, an association of biliary acids with hexamine, which is a cholagogue and disinfectant of biliary passages and intestines, as well as their Femergin, Scillaren, and Ipecopan, the latter being claimed to be superior to Dover's powder both in constancy and rapidity of action.—Savory and Moore, Ltd., 143, New Bond-street, London, W., had an interesting exhibit of their well-known preparations, including the food for infants, invalids, and convalescents, which approximates closely to human milk and contains the vitamins. Prominence was also given to Ethanesal, the underlying principle of which is ketones treated with carbon dioxide and ethylene with ether as a solvent.—Charles Zimmermann and Co., Ltd., 9 and 10, St. Mary-at-Hill, London, E.C., drew particular attention to Idozan, a colloidal iron used as an oxy-hæmoglobin excitant in the treatment of anæmia. The preparation of this substance has been based on the principle of ionisation and is stated to contain 5 per cent. of iron in a non-irritant form. It is a palatable preparation which does not blacken the teeth, and a large number of hæmoglobin charts were exhibited showing the marked rise during treatment and the fall when treatment was suspended. Chalybeate Medicinal Chocolate was another preparation shown by this firm. Each piece is equivalent to 3 gr. of iron.—Under the term Pineoleum, the Pineoleum Co., Inc. (Agents, American Drug Supply Co., Ltd., 40–42, Lexington Street, W.), exhibited a pleasant-smelling inhalant, standardised and guaranteed chemically pure. It is indicated in irritation of the mucous membrane of the throat and nose where anodyne, antiseptic, and emollient action is required.

Pharmaceutical Supply Co., Ltd., 4–10, Hatfield-street, London, E.C., exhibited many useful hospital and nursing home requirements, and the Thermogene Co., Ltd., Victoria Embankment, London, showed their specially prepared cotton-wool, which, in suitable cases, possesses a distinct advantage over poultices.—Cuxson, Gerrard and Co., Ltd., Glasgow, had a useful selection of surgical ligatures and plasters, and also exhibited peptone.—Genatosan, Ltd. (British purchasers of the Sanatogen Co.), Loughborough, Leicestershire, exhibited their Sanatogen, an organic compound of casein and sodium glycero-phosphate Formamint, the well-known throat disinfectant, Genasprin, pure acetyl-salicylic acid, and Cystopurin, a urinary antiseptic containing undecomposed hexamethylenetetramine. This firm also showed detoxicated vaccines.—Oxo, Ltd., Thames House, Queen-street Place, London, E.C., displayed their well-known concentrated form of the stimulating extractive, together with easily digestible and nourishing constituents of fresh beef oxo, "oxo cubes," "hospital oxo," "lemco," and "gong" meat soups.—Virol, Ltd., Hanger-lane, Ealing, London, W., showed Virol and Virolax, the latter of which is now put up in a new form of package.—Vitmar, Ltd., 59, Standen-road, Southfields, London, S.W., showed the Callard's vitamin foods. The Vitmar supplied by this firm has been shown by biological experiments to contain the fat-soluble A and water-soluble B and C, and in addition to its use for the reinforcement of ordinary foods has been used as a galactagogue.—Bovril, Ltd., 148–166, Old-street, London, E.C., had a very attractive display of their Bovril and invalid Bovril, which is a highly concentrated pure preparation of beef whose nutritive value has been proved by long trial.—Newton, Chambers and Co., Ltd., 331, Gray's Inn-road, London, W.C., called attention to Izal for both medical and ordinary use as well as in its many forms as ointment, lozenges, soap, and so forth, and the "Zal" disinfector, an improved form of bronchitis kettle which can be used over a gas ring, spirit lamp, or other form of heat producer, and Jeyes' Sanitary Compounds Co., Ltd., 64, Cannon-street, London, E.C., showed their various preparations of Cyllin.—J. C. Eno, Ltd. (Eno's Fruit Salt), Victoria Embankment, London, E.C., showed their pleasant effervescent saline laxative, which is a combination of alkalies with fruit acids. Salts, such as sulphate of soda and magnesium compounds, are excluded, and care is taken that no trace of calcium, lead, or other common impurities exist in any of the ingredients.—Pepsodent Co., 42, Southwark Bridge-road, London, S.E., displayed their tooth paste, which is acidic in character and stimulates the salivary glands by reason of the contained acid calcium phosphates.—D. and W. Gibbs, Ltd., 105, High-street, Wapping, London, E., demonstrated the value of their dentifrice and dental cream and showed a variety of toilet soaps and a shaving soap, and Kolynos Inc., Chenies-street, London, W.C., displayed their well-known gritless dental cream.—Jaeger Co., Ltd., 95, Milton-street, London, E.C., exhibited pure wool clothing, and Bantum Products, Ltd., Farnley, Leeds, a preparation of coffee consisting of the soluble portion of that article.—Yomf Mfg. Co., 122, Greyhound-lane, Streatham, S.W., called attention to an antiseptic, detergent, and emollient cream for the hands when performing work that soils them, and C. R. Harker, Stagg and Morgan, Ltd., Devon Wharf, Emmott-street, Mile End, London, E., showed Peldo, an antiseptic cream for preventing dirt from penetrating the skin.

We shall deal with the remaining sections of the Exhibition in our next issue.

MINISTRY OF HEALTH.—Sir William Joynson-Hicks has appointed Lord Erskine to be his Parliamentary private secretary; Mr. Douglas Veale, of the Ministry of Health, to be his private secretary; and Mr. A. Nevil Rucker, also of the Ministry of Health, to be his assistant private secretary.

Congratulatory Messages.

The following additional congratulatory messages to THE LANCET *on its Centenary have been received.*

So far as I know only two medical journals printed in English have passed their centenary, the *American Journal of the Medical Sciences* in Philadelphia, which achieved its centenary a few years ago, and now THE LANCET, known all over the world, but especially in the English-speaking world. Its very name is historic, as it reminds us of a long abandoned but once almost universal treatment, while its content displays the most modern science. I have known and read it for over half its existence. It has ever stood in the front rank in labour for the good of the profession, for reform in our hospitals, and for their generous support by the public. I say "our" hospitals, for their world-wide reputation and influence for progress we in America are glad to recognise. The recent generous support given by the Rockefeller Foundation meets with an emphatic approval by our profession in America.

Long may its columns continue to be filled with the latest news in scientific and in practical medicine in all its branches. The older it grows may it ever show as it does to-day the vigour and elasticity of youth.

W. W. KEEN,
Professor of Surgery, University of Philadelphia.

Will you extend to the proprietors and the staff and receive for yourself our felicitations at this time? While American physicians and surgeons naturally cannot appreciate certain services which this journal has undoubtedly rendered to the promotion of British medical enterprises, it is fully cognisant of the services it has rendered to the profession at large by the important contributions which have constantly appeared in its pages. With best wishes for the progress of THE LANCET during its second centenary.

G. W. CRILE,
Professor of Surgery, Cleveland, U.S.A.

May I add a word of congratulation to the many similar tributes you will have received? Though a layman, I have enjoyed the privilege of being more closely and intimately associated with your profession than any other man outside it, and for over 30 years THE LANCET has proved a weekly source of enjoyment and education to me. The profession of medicine owes a debt of deep and lasting gratitude to THE LANCET for its contribution during the past 100 years to the advancement of science, and the position which it occupies in the world of literature is one to be reflected upon with pardonable pride. You have my earnest good wishes for its continued prosperity, tendered in all sincerity.

W. E. HEMPSON.

Permit me to send to the whole staff and the proprietors of THE LANCET my heartiest congratulations on the occasion of a centenary of a medical journal, and one which, during its existence, has always been the exponent of the noble and world-felt position held by British science generally and British medicine especially. Vivat, crescat, floreat!

Fully well understanding the honour of being

THE VIENNA CORRESPONDENT OF THE LANCET.

C'est une particulière joie pour le correspondant français du LANCET d'écrire dans ce numéro du Centenaire, et d'y indiquer combien les échanges intellectuels ont été intimes entre nos deux pays depuis un siècle et combien aussi ce journal y a contribué. Non seulement la réputation de LANCET est mondiale, mais pour le lecteur français, en dehors même du milieu médical où son éloge n'est plus à faire, il représente le type du journal médical anglais, la tradition britannique, qui sait si bien se renouveler en gardant son cadre, ouvrir ses colonnes aux idées neuves, se lancer dans des voies nouvelles, et rester malgré cela elle-même. C'est par l'élite dirigeante d'une nation que se font les rapprochements, et rien n'est plus propre à créer une "entente" que d'échanger des points de vue scientifiques, de confronter des méthodes. C'est à cela que s'est employé le LANCET en instituant des 1830 des comptes rendus des travaux originaux français, et des traditions des conférences cliniques et pathologiques de nos hôpitaux.

Orfila, Andral, Dupuytren, Magendie furent les collaborateurs du journal, et c'est aussi dans ces premières années qu'eurent lieu les mémorables discussions sur le système phrénologique de Gall, auquel Bell et Brodie firent une opposition, si intelligente et si ferme. Cette collaboration franco-anglaise n'a pas cessé et actuellement parait régulièrement un supplément français dirigé par le Professeur Achard. En dehors de ces travaux réellement scientifiques, le LANCET tenait ses lecteurs au courant des évènements français, par les lettres de son correspondant parisien, chargé de renseigner le public médical anglais sur tous les faits qui touchent la médecine, de près ou de loin. C'est donc une collaboration intime qui depuis bientôt un siècle a relié le LANCET et la médecine française. Si par l'intermédiaire de ce journal les idées françaises pénétraient en Angleterre, c'est aussi par lui que les idées anglaises influaient chez nous. Comme je le notais au début de cet article, le LANCET a pris en France, droit de cité pour le public médical français il représente le journal type, et les traductions de ses articles originaux qui paraissent régulièrement dans tous nos grands journaux médicaux, sont toujours recherchées. C'est encore à lui qu'on a recours si on veut se renseigner sur les travaux anglais, on recherchera d'avoir là, ce qu'on veut trouver.

Mais en sortant du domaine propre des travaux ou des recherches médicales, on peut se demander qu'elle a été de puis un siècle, l'influence d'un journal médical anglais, sur nos idées. La science française se manifeste toujours par un point de vue original, en médecine comme en beaucoup d'autres sciences d'ailleurs il y a une idée française, toute différente de l'idée allemande par exemple et souvent opposée. Plus d'imagination, l'habitude d'envisager les faits d'un point de vue plus élevé, plus général, donne à la médecine française une allure qui lui est bien personnelle. Il est donc particulièrement intéressant de la voir traduite, comprise, et interprêtée par le miroir anglais, le LANCET nous renvoie notre image modifiée, adaptée à son nouveau cadre. Presque toujours cette adaptation a pris une forme pratique, et c'est, je le crois le sens le plus net de l'influence anglaise sur la science médicale française. Aussi cette influence s'est elle exercée surtout dans le domaine de l'hygiène et de l'éducation, où, dans ces dernières années particulièrement, nous retrouvons constamment un courant d'anglicisation. Il serait à souhaiter que les relations médicales franco-anglaises soient de plus en plus fréquentes, de part et d'autres, nous aurions grand profit à échanger nos idées.

Les conférences de professeurs, qui, l'an dernier, ont été organisées à Paris et à Londres, sont le début de ce contact plus parfait entre deux pays, où l'entente peut être aussi intellectuelle que cordiale.

YOUR PARIS CORRESPONDENT.

Allow me to congratulate you, the staff, and the publishers of THE LANCET upon the occasion of your Centenary. It has been a great satisfaction to me to be connected with THE LANCET for a long course of years, and I hope that this connexion will maintain the friendly relations which have prevailed hitherto.

YOUR BERLIN CORRESPONDENT.

Correspondence.

"Audi alteram partem."

POST-HOLIDAY LASSITUDE.

To the Editor of THE LANCET.

SIR,—Your leading article of Sept. 1st last deals with a subject that is of special interest at this time of the year, when so many people, returning from their holidays and getting back to their old routine, find to their disappointment that, sunburnt and muscular as they may be, they are even less inclined for work than when they went away to recuperate. And the more extended the holiday the more apt is this lassitude to occur, and one often hears men remark that if they only stayed away a bit longer they would never want to work again.

The suggestion is made by you that this limpness may be due to the blood destruction that takes place during unusual exercise, and you quote Dr. G. O. Broun's work on dogs in support of this. Dr. Broun found that when dogs that had for long lived a sedentary life along with a generous diet were subjected to severe exercise for several days they appeared to be very tired at first, and an examination of the blood, repeated at frequent intervals before, during, and after the exertion, showed that the total corpuscular volume was greatly decreased by the exercise and that it took from one to three weeks to regain its former state. Evidently the blood cells are in some way destroyed during the exercise when this is undertaken by well-fed animals not used to it. The changes do not occur in dogs that have already been living an active and abstemious life. There seems, then, to be no doubt that severe exercise in sedentary, well-fed animals produces blood changes, but it is a long jump to thus explain the post-holiday lassitude (of the existence of which there is no doubt) as being due to such blood changes. It was noted by Dr. Broun that "in the early days of the experiment the dogs appeared tired, but by the end they showed all the signs of thorough enjoyment." And yet the blood changes persist for one to three weeks after the exertion is over. A man who has been on an active holiday for, say, a month feels very fit at the end of the pleasant experiment (just like the dogs), and it is not until the holiday is over and he is back at the old grind that the lassitude appears. Possibly the tired feeling on Monday morning after a too vigorous week-end may be explained in the way that you suggest, but I am speaking of holidays of longer duration than this.

To my mind, the post-holiday lassitude is, as you mention, chiefly psychic, but no doubt is also in part due to the fact that the man has become used to much exercise and now misses it, and, moreover, he has probably picked up a good appetite during his wanderings and now eats more than is required to meet the caloric requirements of his resumed quiet life, and hence suffers accordingly. Dr. Broun's dogs were worst in the early days of their holiday [sic]; the human animal only feels the lassitude after the holiday is over.

I am, Sir, yours faithfully,

Toronto, Canada, Sept. 24th, 1923. R. D. RUDOLF.

UNIVERSITY PATHOLOGICAL DEPARTMENTS.

To the Editor of THE LANCET.

SIR,—It is evident that there is little to be said in favour of university pathological and bacteriological departments carrying on outside work, since your leading article has only elicited a half-hearted defence from Prof. J. W. McLeod, whose arguments would apply equally to several other university departments; I should like to ask him if he would approve of a university carrying on the work of a public analyst through its chemical department. I do not suppose that any university would dream of doing such a thing, the reason being that, as I stated in my previous letter, universities regard chemistry as a science, while they do not so regard pathology. May I suggest a further point—that professors of pathology and bacteriology should show a little sympathy with those who wish to earn a living by the practice of pathology, although they are not attached to a university laboratory.

I am, Sir, yours faithfully,

CHARLES POWELL WHITE.

Manchester, Oct. 3rd, 1923.

To the Editor of THE LANCET.

SIR,—A pathological department in a university ought to strive to attract all real workers in pathology in or around that centre who, in addition to their routine work, desire to have the fuller facilities for research work on lines which are difficult to achieve in this country in the smaller laboratories. They should not feel that they are entering the portals of a rival institution, but rather that they are returning to their Alma Mater to further in their spare time the claims of research and humanity.

As one who has had to strive for a living in pathology I should like to record my opinion that it is unfair that universities should in virtue of their endowments endeavour to oust the smaller laboratories and gain a monopoly not only of private pathological work, but of public health work. It is not always a question of cost which is concerned, since many of the smaller laboratories are run far more economically than the larger ones without any real loss of efficiency. It is easy, however, for university authorities to influence the payment to them of large sums for public health work which could have been done quite as well and quite as economically by other laboratories. The smaller laboratories to-day are as essential to the community as are the larger laboratories, and they should be encouraged by their university colleagues rather than suppressed.

I am, Sir, yours faithfully,

Manchester, Oct. 3rd, 1923. ARNOLD RENSHAW.

LICE AND CRIME.

To the Editor of THE LANCET.

SIR,—Recently there has appeared in the press an important statement by the Society for the Repression of Vermin showing the enormous sums of money rats and mice cost us. I want now to call attention to the perhaps even greater mischief done by smaller vermin—lice—and their connexion with crime.

1. The three great causes of crime are drink, gambling, and destitution. Many persons steal or beg from destitution and because they will not go into the workhouse or the more hated casual ward. And some break windows or do other "malicious" damage, so that they may be sent to prison. Others, if in workhouse or casual ward, will refuse to work, tear up their clothes, or commit some other "workhouse offence" with the same object. And a few quite quietly starve to death. Now I have been told that to the more decent men on the road, the most detestable feature of some of the casual wards is the prevalence of lice. This disgusting condition is quite needless, because other casual wards are *not* "lousy," and are quite decent. The remedy is simple. The new Minister of Health, Sir W. Joynson Hicks, is about to issue a new Order for the casual wards. This Order should contain definite and detailed provisions for the cleanliness of the beds and clothing and bathing arrangements and general accommodation of the casual wards; and it should be declared that it is the duty of the inspectors to see that they are carried out. As an additional security, I would suggest that the magistrates should use their almost forgotten powers of visiting the wards given by the Workhouse Act, 1790, and the Poor-law Act of 1834.

2. A considerable number of persons are convicted every year for not sending their children to school. When many of these cases come before the court it is

shown that the children have been sent to school, but in such a lousy condition that they are (very properly) sent back, and instructions for cleaning given which the parents have not carried out.

3. I will not lengthen this letter by any suggestions how to deal with these latter cases, but wish to emphasise the necessity of efforts to exterminate these vermin in the casual wards and elsewhere on account of their being a cause of crime as well as inflicting serious injury to comfort and self-respect. And really to offer lousy casual wards to ex-soldiers is the deepest ingratitude. Of course it is not only the lice in the wards which push men into crime; there is also the wretched food and (in some wards) the cruel task. The new Order should amend the treatment in these respects.

4. I should be glad if you can add the following figures of persons tried in courts of summary jurisdiction in 1921—the latest available: Begging, 4313; sleeping out, 2923; misbehaviour of paupers, 459; stealing or destroying workhouse clothes, 130. It is alarming to see how these figures have risen since 1917.

The figure for malicious damage is 10,317; for simple larceny and minor larcenies, 40,992; and for offences against the Education Acts, 26,529.

I am, Sir, yours faithfully,

Oxford, Sept. 29th, 1923. J. THEODORE DODD.

THE LATE MR. H. D. FARNELL.

To the Editor of THE LANCET.

SIR,—I wish to add a word or two to the excellent obituary notice of Mr. Farnell, of Eastbourne. He was a fellow student of mine and a fellow resident in old days, and we were staunch friends throughout his professional life, and I can bear witness to the singular unity of his character and career from first to last. He was always alert, quick at the uptake, seizing at once the salient features of any case. He arrived at his conclusions rapidly, and they were based on sound premises. In those early days he had undoubted charm; he was cheery and friendly alike with patient, fellow student, and chief. There were few residents so popular and few so modest and yet inspiring. All these qualities were characteristic of Farnell throughout his happy and busy life. He never spared himself. It is no wonder that his faculty of rapid and effective investigation, his marked power of concentration and decision in stating his conclusions, combined with real sympathy, made him a very successful practitioner. He was always bon camarade. I should think it never occurred to him to ascribe unworthy motives to his fellows. In medical societies and all joint efforts for the good of his profession he was keen, indefatigable, and possessed of remarkably good judgment.

It is needless to say that everybody who met Farnell in his home very soon realised what a good husband and tender father he was. He had in no scant measure the very genius of friendship.

I am, Sir, yours faithfully,

Sept. 28th, 1923. THOMAS BARLOW.

STRIÆ DISTENSÆ.

To the Editor of THE LANCET.

SIR,—In your issue of Sept. 1st Dr. Bedo Hobbs states that it is probable that the two conditions—striæ distensæ and lineæ gravidarum—are not identical. He bases this assumption on: 1. Age-period strictly limited in striæ distensæ. 2. "The striæ gravidarum are pinkish-white in appearance even when first formed and never present the livid purple colour of striæ distensæ, which seems to indicate a more profound change." 3. That "one might argue that the general nutrition of the body, including the skin, is lowered during pregnancy, and that the pressure of tight clothing on the distended abdomen acts in the same way as the pressure produced by lying in one position." He refers to one group of cases in which large deposits of fat are *rapidly* laid down.

In subcutaneous œdema and in those with striæ above the patella, &c., are cases in which the skin is suddenly stretched and remain so for some time with no relaxation. It is here that the livid purple coloration is noticed and may be compared with the result of tension sutures used in abdominal (chiefly) operations, where frequently one observes dark blue or purple discoloration at the site of the sutures, due to *sudden* and prolonged stretching of the skin. Lineæ gravidarum occurs as the result of *slow* progressive enlargement, and where, as a result of the slowness of the process, the nutrition of the skin is not impaired and the blue discoloration (which is the sign of impairment) does not occur. I would suggest that herein only lies the difference between the two conditions. I am, Sir, yours faithfully,

Swansea, Sept. 28th, 1923. H. SPENCER-DAVIES.

CANCER AND DIET.

To the Editor of THE LANCET.

SIR,—Referring to Dr. Monckton Copeman's statements in THE LANCET of Sept. 29th as to the effect of modified diets in cases of cancer, I should like to point out that many years ago the late Dr. Mortimer, of Exeter, one of the most observant general practitioners I have ever met, pointed out to me the good effects of denying meat as an article of diet in inoperable cases of cancer. I have since in such cases advised that this rule should be followed and have in a considerable number of cases heard from the practitioners concerned that in their opinion this practice had proved beneficial. I think it is especially useful in the elderly.

I am, Sir, yours faithfully,

Exeter, Sept. 30th, 1923. RUSSELL COOMBE.

THE TUBERCULIN DISPENSARY FOR THE POOR.

To the Editor of THE LANCET.

SIR,—In your review of Dr. Camac Wilkinson's book on this subject in THE LANCET of Sept. 8th, some statistics of mine were subjected to a certain amount of criticism to which, perhaps, I may be permitted briefly to reply. I regret that my short article [1] did not appear explicit enough as to the method of selection of cases, which, as the reviewer not unreasonably states, is a most important factor to be considered in coming to any conclusion.

The sole method of selection of cases was the ability of the patient to attend the central dispensary twice a week for treatment and was not determined in any way by temperature or physical signs. Patients "on the books" of the six or seven outlying dispensaries were not treated by tuberculin for the simple reason that it was impossible in an area of about 25 miles radius for one tuberculosis officer to attend frequently enough to administer the tuberculin. The central dispensary at Oxford was really a tuberculin dispensary. At it were treated with tuberculin every patient who could attend regularly. In my figures are included cases of advanced disease who received a few injections only, cases which in the light of greater clinical experience would not now be subjected to tuberculin treatment and which, at varying periods in the natural progress of the disease, were no longer able to attend. These cases obviously reduce the percentage of good results and explain the difference between my figures and those of Dr. Wilkinson [2] where, of patients in stage 1 and stage 2 of the disease nine years after treatment, 72 per cent. were still alive and able to work. Those of us who have used his method of tuberculin administration are prepared to accept his figures and would welcome further inquiries, as you suggest, into the action of a remedy which we believe to be at once more efficient and much more economical than the methods at present employed in the treatment of lung tuberculosis.

There is much yet to be learned about tuberculin. It may be that Prof. Dreyer's antigen will solve

[1] Brit. Med. Jour., Lond., Sept. 9th, 1922, 473.
[2] Ibid., April 21st, 1923.

the difficulties in treating the third stage cases, although previous "defatted" tuberculin, in small doses, have met with little success. Better results in the first and second stages of the disease can hardly be expected than those published by Dr. Wilkinson.

In conclusion, I should like to state that my work with tuberculin was carried out independently of Dr. Wilkinson, with whom I had no association from the time I began using his method till quite recently, prior to his departure for a prolonged holiday abroad.

I am, Sir, yours faithfully,

Oxford, Oct. 3rd, 1923. WILLIAM STOBIE.

PS.—All cases referred to were sputum positive.

COW'S MILK IN INFANT FEEDING: A CORRECTION.

To the Editor of THE LANCET.

SIR,—May I call your attention to a mistake in THE LANCET of August 18th (p. 361) in the report on my paper, Cow's Milk in Infant Feeding, which was read in the Children's Section of the British Medical Association annual meeting at Portsmouth on July 26th.

I am reported to have said that *spray* process milk powders formed a curd with rennet similar to human milk, were rich in vitamins, &c. My paper was published in the *British Medical Journal* of August 25th, and reference to p. 324 of that issue gives my words: "Whereas the addition of rennet to reconstituted milk prepared by the former process (the roller method) produces a fine flocculent curd, *its addition to a solution of spray process milk powder forms a dense mass identical with that formed in raw milk.*" My remarks as to vitamins applied to dry milk generally and not to spray milk. Your report has misrepresented facts which probably are well known to all who have studied the subject.

I am, Sir, yours faithfully,

Harley-street, W. R. J. BLACKHAM.

*** We regret the error, which, as our correspondent says, must have been detected by students of the subject.—ED. L.

Obituary.

THE LATE SIR HALLIDAY CROOM.

WITH the death of Sir Halliday Croom, which was chronicled last week, there passed away the last link between the present and the days of Edinburgh's unassailed pre-eminence as a medical school, the days of Syme, Lister, and Simpson. It is probably true to say that since the death of Simpson no death in the Edinburgh medical world has left such a gap, and Croom probably rivalled Lister in the affectionate esteem and regard in which he was held by his students. It is essentially as a teacher that Sir Halliday Croom will be remembered. When in 1878 Dr. Croom, as he then was, began lecturing on midwifery and diseases of women in the extra-mural school in Minto-street his success was immediate. From that time to his retirement from the Chair of Midwifery in 1921 he devoted himself heart and soul with almost religious fervour to his teaching, and to his power will testify every student who passed through his hands. Croom was the first man in Edinburgh to deliver post-graduate lectures, and the story is told of the effect of one of them on an American doctor. The lecture was on extra-uterine pregnancy, and on being asked what he thought of it, the doctor exclaimed, "I guess he makes you feel that the welfare of your mortal soul depends on your knowledge of extra-uterine pregnancy." The story well illustrates the impressive personality of the man, his wonderful histrionic gifts, and his unflagging enthusiasm. In the pains and trouble he took with his teaching he must be without rival. On the mornings on which he was to deliver a clinical lecture he would do no other work before it, but spent all the time in preparation, and every one of his systematic lectures was freshly prepared. He had a great facility for picking out the salient points of a case and driving them home with happy illustrations. It was in the spirit of the Hippocratic Oath that he taught, imparting his knowledge to others as a sacred duty, and he was always happiest and at his best when lecturing to an audience of students whom he knew personally. He was ever a staunch friend of his students, many of whom have reason to remember his friendship in deep gratitude. It has been said that his strength was his weakness; that had he devoted to investigation some of the energy he imparted to his teaching he might have added more greatly to the scientific knowledge of his specialty. But the neglect of his great gift would have been sinful. He improved his talent with ceaseless endeavour, and the far-reaching effects of his life's unselfish work no man can gauge. Like all great men, Croom had his foibles. He was particularly proud of his handwriting, and used to take the most meticulous care over his signature. He always lectured in a swallow-tailed coat—the same one. It was his prophet's mantle. When he assumed it the suave, courteous physician became the inspired teacher. Croom felt his retirement from the Chair of Midwifery most keenly, and he confessed that, after he had given up his teaching which had become so essential a part of his life, he felt like a wandering ghost. In the end no doubt, although he remained optimistic and hopeful, he was not altogether sorry to lay down a life well spent.

To the above appreciation of an old pupil we add a personal tribute from his friend and colleague, Dr. A. F. Barbour, who writes: "Sir Halliday Croom was the most considerate of colleagues and a very true friend. He had a charming personality, sensitive to the attitude of others and to the graces of life, careful of those small courtesies which make the wheels run smoothly, were it an exquisitely spaced, penned, and worded line of congratulation, of apology or direction; happy to advance the interests of a friend, desperately unwilling to hurt or offend the least intimate or the most undeserving. Many will remember the gracious host who tactfully and cordially made each guest welcome and was never so intent on his own good story as to fail in drawing out from others their opinions and information. For a long term of years we were intimately associated as colleagues in the Infirmary, Maternity Hospital, and University; few can look back with greater pleasure on a longer period of work together, and during it all the wonderful courtesy and consideration of Croom made one glad to have been one of his friends. As revealing depths not reached by the casual acquaintance, I may be allowed to add a sentence from his last letter, one of many received during our years of intercourse: 'I think few men can look back with greater pleasure upon a long memory of association. *Fiat voluntas Tua.* The night has come, I can hardly realise the day is past.' And this from a letter to another intimate friend: 'As one gets older one's creed gets simpler. I am grateful to God for all his mercies and endless forbearance, and my hope and belief are that that mercy and forbearance will be extended to us in the world beyond. For I feel sure that when that wondrous hour comes when the road leads down to the last slope which we must all follow, and I come near the dark waters over which the evening mist hangs thick, I shall find that faithful friend whom I have so often forgotten and wronged waiting near at hand to give me a last word of cheer, or, it is just possible a word of welcome as I set my foot on the shore which is so far off and yet so near.'"

SOCIETY OF SUPERINTENDENTS OF TUBERCULOSIS INSTITUTIONS.—An ordinary meeting of this Society will be held at 122, Harley-street, at 4 P.M. on Oct. 15th, when a discussion on Thoracoplasty will be introduced by Mr. W H. C. Romanis, and a final report will be submitted by the committee to which was referred the question of the training of tuberculosis nurses.

Medical News.

UNIVERSITY OF LONDON.—A course of eight lectures on the Histology of the Nervous System is being given by Dr. C. Da Fano at King's College, Strand, W.C. 2, at 4.30 P.M., on Wednesdays. The course began on Oct. 10th. A course of eight lectures on Newer Aspects of Nutrition is being given by Prof. V. H. Mottram at King's College for Women, 61, Campden Hill-road, W. 8, at 5 P.M., on Mondays. The course began on Oct. 8th. Attendance at either course is recognised in connexion with the B.Sc. (Honours) degree in physiology, and admission is free.

University College.—Dr. A. V. Hill, the newly elected Jodrell Professor of Physiology, will give a public inaugural lecture on the Present Tendencies and Future Compass of Physiological Science on Tuesday, Oct. 16th, at 5.30 P.M. The lecture will be held in the theatre of the new anatomy building at University College, and Prof. E. H. Starling will take the chair. Cards of admission will be sent on application to the secretary of the College; such applications should be accompanied with a stamped addressed envelope. The new anatomy building will be open to inspection as from 4.30 that afternoon.

UNIVERSITY OF SHEFFIELD.—The diploma in Public Health of this University has been awarded to Samuel Bryson and Patrick Kane.

UNIVERSITY OF BRISTOL.—A post-graduate demonstration will be held at Swindon on Oct. 17th, when Mr. C. F. Walters will discuss Differentiation of the Acute Abdomen and its Simulators.

PSYCHOLOGY AND PSYCHOTHERAPY.—A course of seven public lectures on this subject will be given in the Examination Schools at Oxford by the Wilde Reader in Mental Philosophy, Dr. William Brown, on Mondays, at 5.45 P.M., commencing Monday, Oct. 15th.

FEDERATION OF MEDICAL AND ALLIED SERVICES.—On Wednesday, Oct. 24th, at 4 P.M., a Conference will be held at the offices of the Federation, 12, Stratford-place, London, W., the question to be debated being the utility of a periodical medical overhaul of life policies. It is suggested that holders of policies willing to submit and pay for such scrutinies might be able to obtain more favourable terms from insurance companies, and that companies might like to obtain up-to-date information as to their risks.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The demonstrations, open to advanced students and medical practitioners, of specimens in the Museum commenced in the theatre of the College in Lincoln's Inn Fields on Oct. 12th, at 5 P.M., when Sir Arthur Keith showed specimens illustrating hernial formations of an acquired nature which form at various points of the alimentary canal and at other sites; on Oct. 19th, at the same time, those illustrating hernial formations of developmental origin which occur along the alimentary and respiratory tracts will be dealt with; and on Oct. 26th he will demonstrate the distinction between congenital and acquired forms of true hernia. On Oct. 15th, at 5 P.M., Prof. S. G. Shattock will show specimens illustrating necrosis, on Oct. 22nd those illustrating arteries; and on Oct 29th actinomycosis and madura disease.

GUY'S HOSPITAL MEDICAL SCHOOL.—The following scholarships have been awarded:—Open Scholarship in Arts: Mr. W. S. Baxter, Foyle College, Londonderry, and Mr. J. W. Crow, Charterhouse, £50 each. Scholarships for University Students: War Memorial Scholarship, Mr. D. Lurie, Oxford, £80; Open Scholarship, Mr. W. D. B. Read, Oxford, £80. Scholarships in Junior Science: Confined Scholarship, Mr. E. T. Conybeare, Plymouth College and Guy's, £100; Open Scholarship, Mr. R. E. Fossey, Brighton Grammar School and Guy's; E. M. Sharples, Queen's College, British Guiana, £50 each.

Guy's Hospital Dental School.—War Memorial Scholarship in Arts: D. C. Buckley, King's College, London, and Guy's; W. P. Roe, University College School, £20 per annum each for four years. Junior Science Scholarship: F. S. Warner, Guy's, £20 per annum for two years; N. C. Yendell, Clifton College and Guy's, £20 per annum for three and a quarter years.

ST. GEORGE'S HOSPITAL.—The annual dinner of the School and Hospital was held on Oct. 1st at the New Metropole Hotel, when Mr. E. B. Turner presided over a representative body of guests. The occasion was taken by the chairman and Lord Greville, the hon. treasurer of the Hospital, to tell the audience in straightforward and simple fashion the present position of affairs at the Hospital, especially in reference to the school. The note of Mr. Turner's speech was the necessity of an intimate connexion at a hospital like St. George's between the charitable and clinical work and the educational institution. The Dean of the Hospital, Dr. J. A. Torrens, in a quietly humorous speech, accented the points made by showing the recent progress in numbers of the school, the very high level of examinational successes, and by alluding pointedly to the reappearance of St. George's again in the athletic arena. Lord Greville said that the Governors of the Hospital had under immediate consideration many things for the improvement of the institution both as a hospital and a teaching school, though the difficulty of raising money at the present moment compelled them to go slowly, but all present who knew their institution were delighted to hear that the first of these schemes was likely to be a large rearrangement of the out-patient department. The treasurer pointed out that although the Hospital is placed on what is probably the most expensive residential site in London it possesses the houses adjoining the present building, so that the most difficult preliminary in the extension of public buildings—namely, the acquisition of the surrounding land, is obviated. Amusing speeches from Sir George Turner, consulting surgeon to the Hospital, and Sir Malcolm Morris, replying for the guests, brought a pleasant evening to a conclusion.

THE annual Harveian commemoration dinner of the Royal College of Physicians of London will be held at the College on Oct. 18th, at 7.30 P.M.

THE chairman and members of Council of the British Medical Association with their guests will dine at the Hotel Victoria (Edward VII. Room), London, on Wednesday, Oct. 24th, at 7 for 7.30 P.M.

THE old students' dinner of St. Thomas's Hospital, London, will be held at the Princes' Restaurant, Piccadilly, on Friday, Oct. 26th, at 7 for 7.30 P.M., Mr. W. H. Battle in the chair.

THE dinner of the Chelsea Clinical Society will take place at the Café Royal, Regent-street, London, on Oct. 30th, at 7 for 7.30 P.M. The hon. secretary is Dr. P. Seymour Price, 41, Sloane-gardens, S.W. 1.

WESTMINSTER HOSPITAL.—The annual dinner of past and present students of Westminster Hospital was held at the Trocadero Restaurant on Oct. 4th, Mr. Walter Spencer, the senior surgeon, in the chair. In giving the toast of the Hospital and Medical School he reminded his audience that Westminster had now entered on its third century of existence in the neighbourhood in which it was founded. The voluntary system had persisted throughout, and there was, he felt sure, every prospect of a continuance if the appeal shortly to be made to meet the cost of rebuilding was successful. The new building would have 235 beds, with new special departments, operating theatres, and improvements of every necessary kind. In giving the toast, Mr. Spencer coupled with it the name of Dr. A. S. Woodwark, Dean of the Medical School. Dr. Woodwark, in his reply, described the condition of the school as satisfactory in every way. Each year since the war had witnessed a steady increase in the number of students, a succession of examination pass lists which compared well with those of any other medical school in the metropolis, and a gradual return to pre-war conditions as regards social and athletic activities. Sir James Purves-Stewart proposed The Universities, and in their replies Sir Archibald Garrod gave a résumé of the relation of biochemistry to clinical practice, and Sir Clifford Allbutt drew an optimistic picture of the possibilities and opportunities open to those who preferred to devote themselves to the more academic side of their profession. Mr. H. J. Waring and Prof. David Hepburn also responded. Mr. William Turner proposed The Past and Present Students, adding that this, generally the most popular toast of the evening, was on this occasion superseded by that of the chairman to come later, to whose retirement he referred in sympathetic terms. He coupled with the toast the names of Dr. Robert Nimmo Watson, who had most patriotically come all the way from Harrogate, and Mr. R. A. Hickling. Dr. Watson voiced the sentiments of the men in general practice, who had known Mr. Spencer throughout the whole of their career, and had found every year more reasons to express their gratitude. Mr. Hickling, representing the present students, said that the only thing to complete their satisfaction would be the provision of an athletic ground of their own. Mr. Arthur Evans, in proposing The Visitors, coupled with the toast the name of the Rev. Harold Costley-White, Headmaster of Westminster School; in response Mr. Costley-White stated that as a school master he had always felt that for a medical career a boy required a very early preparation, psychically as well as academically.

Dr. F. de Havilland Hall, with many affectionate references, proposed The Chairman, his old colleague, now retiring from the staff of the hospital which he had served so loyally for 35 years. Mr. Spencer briefly replied.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—The annual dinner will be held at the Hotel Cecil, Strand, London, W.C., on Oct. 19th. The President, Dr. T. W. Naylor Barlow, and Mrs. Barlow will receive the guests at 7.10 P.M., and dinner will be served at 7.30. Amongst those who have already accepted invitations are the Minister of Health, Sir Arthur Robinson, Sir Humphry Rolleston, Lord Riddell, Sir George Newman, Sir Dawson Williams, Mr. Justice Swift, and Sir Squire Sprigge. Members are asked to give early notice to the executive secretary at 1, Upper Montague-street, Russell-square, London, W.C. 1, of their intention to be present. Tickets 12*s.* 6*d.* each.

PRINCE OF WALES HOSPITAL.—The annual dinner of the Reunion Association will be held at Pagani's Restaurant, Great Portland-street, London, W., on Nov. 8th, at 7.30 for 8 P.M. The chair will be taken by Dr. George Chappel. The price of the dinner will be 12*s.* 6*d.* (exclusive of wine) for members and their guests. The secretaries are Dr. Jenkins Oliver, 1, Devonshire-place, London, W. 1, and Mr. S. O. Rashbrook, 7, Wellesley-road Chiswick, London, W. 4.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.—The annual dinner of past and present students was held in the Connaught Rooms on Oct. 1st, when Mr. V. Warren Low presided over a large and representative gathering. Among the guests were the Vice-Chancellor of the University of London, the Director-General of the Royal Naval Medical Service, the Director-General of the Royal Army Medical Service, and the Mayor of Paddington. In proposing the toast of the Hospital and Medical School, Mr. Warren Low, who had a great reception, recalled the many distinguished men who had helped to build up St. Mary's, and expressed the opinion that 80 years was a very good kind of age for a medical school to be. Replying for the hospital, Mr. A. R. Prideaux, chairman of the board of management, was able to give a satisfactory account of the financial position of the hospital, a happy state of affairs due in no small part to the cordial coöperation between the staff of the hospital and the lay members of the board. Dr. C. M. Wilson, the Dean, gave an equally cheerful account of the position of the medical school. Though the entries at medical schools throughout the country showed signs of falling, the numbers at St. Mary's were higher than they ever had been. By arrangement with Queen Charlotte's Hospital, St. Mary's students now attended there for a period of instruction in midwifery, and this, combined with the facilities already afforded by the labour wards and the large district served by St. Mary's, made the teaching in this branch of the curriculum beyond reproach. In other respects, notably in the class of the primary Fellowship examination, academic achievement reached a high level, and there was a welcome vigour in athletic circles. A pleasant episode was the brief and happy speech of Dr. Milner-Moore, the doyen of St. Mary's men, who attended the inaugural dinner in the early "sixties." The official proceedings closed with the toast of the chairman, proposed by Mr. Herbert Waring and received with musical honours.

MEDICAL DEFENCE UNION.—The annual general meeting was held at the Royal Hotel, College Green, Bristol, on Sept. 29th, Sir Charles Ballance, the President, occupied the chair. In moving the adoption of the annual report of the Council for the year 1922–23, the President said that he was glad to be able to congratulate the members upon the continued expansion and satisfactory progress of the Union. On only one previous occasion had the annual meeting been held in Bristol, and that was 14 years ago. At that time the membership was approximately 7700. Now it was over 10,700. The income of the Union then was only a little over £4000. Now it was over £10,000, and with this improvement in the financial position the Union was able to do far more for its members than formerly. Every additional member meant greater protection for all, and medical practitioners should realise that in joining the Union they were not only protecting their own interests, but were doing something for others. The report showed that one noticeable feature of the last few years had been the increase in the number of women members. Over 400 women doctors have now joined the Union, three women are on the Council, and their advice has been helpful in many cases. Efforts have recently been made to induce the Union to make some concession to members of the British Medical Association, but the Council had declined to make any differential treatment. Both the Union and the London and Counties Medical Protection Society felt that they were mutually concerned in maintaining complete independence, and with a view to the promotion of good feeling, and, where necessary, coöperation, a standing joint committee, consisting of representatives of each society, had been constituted and would meet at regular intervals.

The transfer to the new offices in Bedford-square has been effected without any interruption to work and the change is much appreciated. In view of the higher costs of litigation, the Council has thought it prudent to raise the amount of the insurance indemnity after Jan. 1st next to £3000, the improved financial position of the Union enabling the Council to provide the additional cover without any increase in the annual subscription to the Union. The President specially pointed out that charges of negligence and malpraxis against medical practitioners were no less frequent to-day than formerly. By far the greater number of the allegations which doctors were called upon to meet were a mere pretext for evading the payment of professional accounts. He could not conceive how anyone engaged in active practice could be so foolish as to refuse to avail himself of the protection which an organisation such as the Medical Defence Union afforded. He regarded membership of a Defence Society as equally important with registration as a medical practitioner, and was glad to find that the newly qualified were joining the Union in increasing numbers.

The annual report of the Council and the statement of accounts were adopted. Dr. M. Hallwright, Dr. W. Rigden, and Dr. H. Robinson were re-elected members of the Council. On the recommendation of the Council the following resolution was unanimously adopted:—

> That the Council of the Medical Defence Union, having full discretion under the Articles of Association as to the cases which it shall undertake on behalf of a member, shall have full discretion in any case in connexion with divorce proceedings to withhold or partially withhold the indemnity insurance afforded to members in respect of damages and costs of the other side which may be awarded against them.

A hearty vote of thanks was accorded to the President and Council for their services during the past year.

The Council, at its meeting on Oct. 4th, unanimously appointed Mr. Walter G. Spencer President of the Union for the ensuing year.

SOCIOLOGICAL SOCIETY.—A course of six lectures on the Bearing of Psycho-Analysis upon Sociological Problems will be held at Caxton Hall, on consecutive Tuesdays, at 8.30 P.M. The introductory lecture was delivered by Dr. Ernest Jones on Oct. 9th. Subsequent lectures will be given by Dr. James Glover, Mr. J. C. Flugel, Dr. M. D. Eder, Miss Barbara Low, and Miss E. Sharpe. Further particulars may be obtained from the Secretary, Psycho-Analytical Lecture-Course, Leplay House, 65, Belgrave-road, Victoria, London, S.W. 1.

HUNTERIAN SOCIETY.—The programme of the Society for the session 1923–24 is briefly as follows: Oct. 22nd, dinner meeting at Simpson's Restaurant, Cheapside; presidential address by Sir H. E. Bruce Bruce-Porter on the Pitfalls of Medical Practice. Nov. 19th, at Cutler's Hall, discussion on Medicine and Letters, opened by Mr. W. B. Maxwell. Dec. 17th, dinner meeting at Simpson's Restaurant, Cheapside; discussion on the Influence of Ductless Glands in Infancy, Middle, and Old Age, by Drs. Langdon Brown, J. H. Thursfield, Leonard Williams, and Crichton Miller. Jan. 14th, at the Mansion House, Hunterian lecture on Infections of the Urinary Tract due to the *B. coli communis*, by Sir John Thomson-Walker. Feb. 12th, annual dinner at the Langham Hotel. March 3rd, at the Mansion House, Hunterian oration, Changing Standpoints in Cardiac Medicines, by Sir Sydney Russell-Wells. March 24th, dinner meeting; paper on Rheumatics, by Dr. F. J. Poynton. April 14th, annual general meeting.

HEALTH WEEK.—The Health Week Committee appointed by the Royal Sanitary Institute have been conducting an extensive campaign, which finished this week, with the object of impressing on the public the need of an intelligent understanding of the principles of health and hygiene in ameliorating the distresses of our time. The ordinary man knows in his heart that unless our civilisation keeps us healthy it is of no use, and that the one great cause of disease is ignorance. As knowledge has spread during the last 50 years, so has the expectation of life increased, but as yet the national health and physique is far from the ideal. It is believed that the death-rate of the country could be reduced by 40 per cent. if the knowledge now existing among well-informed men in the medical profession were actually applied in a reasonable way and to a reasonable extent. The Public Health Committee of the West Riding County Council, under the direction of the county medical officer, have been conducting a vigorous health propaganda among school-children. Addresses have been delivered in the schools by some 142 medical practitioners, who have consented to give their services voluntarily. Leaflets of an attractive and interesting nature have been widely distributed among the scholars to encourage habits of cleanliness, and to create an interest in the care of the body.

A paragraph from the "Scholar's Health Creed" runs: "I believe that my individual and personal effort is even more necessary than the help of the sanitary authorities or the medical officer of health in producing a high standard of health in the community, for I am indeed 'my brother's keeper.'" The press and the pulpit have coöperated in the work, while a series of 24 lectures has been arranged by the county council for the coming winter.

LONDON DERMATOLOGICAL SOCIETY.—A general meeting of the Society will be held at 4.30 P.M. on Oct. 16th at St. John's Hospital, 49, Leicester-square, W.C. At 5.15 P.M. Dr. A. Knyvett Gordon will read a paper on the Clinical Value of Biochemical Tests in Dermatology.

INSTITUTE OF HYGIENE.—A series of lectures upon Food and Diet will be delivered at the Institute of Hygiene on Tuesdays, at 3.30 P.M., beginning on Oct. 16th, when Mr. Grant Ramsay will lecture on Foods, Feeding, and Efficiency.

DONATIONS AND BEQUESTS.—Colonel Hubert Alfred Johnson, of Allestree, Derbyshire, and Bradford Iron Works, Manchester, who for some years commanded the 4th Manchesters and who saw service during the war, bequeathed £500 each to the Derbyshire Royal Infirmary, the Derbyshire Hospital for Sick Children, the National Society for the Prevention of Cruelty to Children, the Royal Society for the Prevention of Cruelty to Animals, the Ancoats Hospital, and Ardwick and Ancoats Dispensary, Manchester.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—A special intensive course in Proctology will be given at St. Mark's Hospital, City-road, from Oct. 15th to 27th, and will include clinical lectures and demonstrations in the wards and out-patient department each day by the members of the staff. A short course in Dermatology will also be held at the Hospital for Diseases of the Skin, Blackfriars, from Oct. 29th to Nov. 10th, and the next fortnight's "refresher" course in General Medicine and Surgery will be given by the Royal Northern Hospital in conjunction with the Central London Ophthalmic Hospital, the North-Eastern Fever Hospital, and the Royal Chest Hospital from Nov. 5th to 17th. There will also be further special courses during November on Children's Diseases at the Children's Clinic, Western General Dispensary; Gynæcology at Chelsea Hospital for Women; Ophthalmology at the Royal Westminster Ophthalmic Hospital; Psychological Medicine at the Maudsley Hospital; and on Venereal Disease at the London Lock Hospitals. Full particulars and copies of the syllabus of the above courses can be obtained from the Secretary to the Fellowship of Medicine, at 1, Wimpole-street, W. 1. As in some cases the number attending the courses is limited, early application should be made.

MEDICAL SICKNESS, ANNUITY, AND LIFE ASSURANCE SOCIETY.—The annual report of the Society for the year ending June 30th, 1923, states that the number of sickness and accident fund policies issued was 353 for annual premiums of £4504. Sickness claims paid amounted to £19,072. The total of the fund at close of the period was £245,330. Life assurance policies numbered 119, assuring £78,450 less re-assurances of £500, net £77,950, for net annual premiums of £2901 and single premiums of £219. Claims paid totalled £1434. The total premium income of the Society amounted to £47,043. The expenses of administration were £7158, being 15·4 per cent. of the premium income. The rate of interest earned was £4 13*s.* 8*d.* per cent. gross, and £3 14*s.* 6*d.* per cent. after deduction of tax. The two funds have increased by £8486, and amount, after transferring £3000 to the reserve fund and £2000 to the staff pension fund, in accordance with the resolution passed at the annual meeting, Oct. 2nd, 1922, to £349,230.

NEWCASTLE-UPON-TYNE AND NORTHERN COUNTIES MEDICAL SOCIETY.—The first meeting of the session was held in the Royal Victoria Infirmary on Oct. 4th. Dr. R. Esmond Moyes, the President, was in the chair, and about 100 members were present. A large number of medical and surgical cases were demonstrated by the following members: Prof. W. E. Hume, Drs. George Hall, G. A. Berkeley Cole, S. Whateley Davidson, J. C. Spence, Prof. H. Brunton Angus, Messrs. Hamilton Drummond, W. A. Hewitson, H. Harvey Evers. A series of pathological specimens from the museum of the University of Durham College of Medicine was arranged by Mr. W. E. M. Wardill, the curator. The Society meets monthly during the winter session, and in addition to the ordinary meetings two clinical and pathological meetings have been arranged for the convenience of country members, at 4.30 P.M., on Oct. 24th and Jan. 23rd, 1924. The annual address and dinner will take place on Dec. 6th. On Feb. 7th, 1924, an address will be delivered by Dr. Hugh Thursfield, London, and on March 6th a discussion will be opened by Dr. Leith Murray, Liverpool, on Cæsarean Section, its History, Indications, and Limitations.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Tuesday, Oct. 16th.

GENERAL MEETING OF FELLOWS: at 5 P.M.
Ballot for election to the Fellowship. (Names already circulated.)

PATHOLOGY: at 8.30 P.M.
Papers:
Dr. James Young: Further Observations on the Ætiology of Malignant Disease and the Leukæmic Phenomena.
Dr. E. H. Kettle: Experiments with "Defatted" Tubercle Antigen.
Dr. J. Freeman: Pollen Antigen prepared by Dreyer's Method.
Dr. E. E. Atkin: Cultural Characteristics of the Different Types of Meningococci.

Wednesday, Oct. 17th.

HISTORY OF MEDICINE: at 5 P.M.
Paper: Dom Louis Gougaud, O.S.B.: Phlebotomy in the Monasteries.

Thursday, Oct. 18th.

DERMATOLOGY: at 5 P.M. (Cases at 4.30 P.M.)
Cases:
Dr. H. MacCormac: Erythematous Lupus with Hypodermic Nodes.
Dr. H. W. Barber: (1) Prurigo Nodularis; (2) Macular Atrophy; (3) Persistent Streptococcal Impetigo.
At 8.30 P.M., *Special Evening Meeting.*
Paper:
Dr. J. A. Fordyce (Columbia University): Results of Treatment in Syphilis of the Nervous System.

Friday, Oct. 19th.

ELECTRO-THERAPEUTICS: at 8.30 P.M.
Presidential Address:
Dr. W. J. Turrell: Electrical Energy as a Curative Agent.

THE ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.
THURSDAY, Oct. 18th.—8.15 P.M., Opening Meeting of the Session, Surgeon Rear-Admiral Sir Percy Bassett-Smith, K.C.B., C.M.G., President, will deliver his inaugural address. The meeting will be preceded by a Demonstration at 7.45 P.M., of the Development of the Malaria Parasite in the Mosquito.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, WEST LONDON HOSPITAL, Hammersmith, W.
MONDAY, Oct. 15th.—10 A.M., Mr. Maingot: Surgical Pathology. 12 noon, Mr. Simmonds: Applied Anatomy. 2 P.M., Mr. Simson: Diseases of Women.
TUESDAY.—10 A.M., Mr. Steadman: Dental Department. 12 noon, Dr. Burrell: Chest Cases. 2.30 P.M., Mr. Tyrrell Gray: Surgical Wards.
WEDNESDAY.—10 A.M., Dr. Saunders: Medical Diseases of Children. 12.15 P.M., Dr. Burnford: Medical Pathology. 2 P.M., Dr. Pernet: Skin Department.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Department. 12 noon, Mr. Simmonds: Demonstration of Fractures. 2 P.M., Mr. MacDonald: Genito-Urinary Department.
FRIDAY.—11 A.M., Dr. McDougal: Electrical Department. 12 noon, Dr. Endean: Venereal Diseases. 2 P.M., Mr. Sinclair: Surgical Out-patients.
SATURDAY.—10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Dr. Burnford: Medical Wards. 10 A.M., Mr. Banks-Davis: Operations on the Throat, Nose, and Ear.
Daily, 10 A.M. to 6 P.M., Saturday 10 A.M. to 1 P.M., In-patients, Out-patients, Operations, Special Departments.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street, Marylebone, W. 1.
(Special Two Weeks' Intensive Course in Cardiology. Mornings 10 and 11.15 A.M.; afternoons 2 and 3 P.M. Saturday in the forenoon only.)
MONDAY, Oct. 15th.—Dr. B. T. Parsons-Smith: The Anatomy of the Heart. Dr. J. Strickland Goodall: X Ray Examination of the Heart. Dr. R. O. Moon: Ward Demonstration. Dr. J. Strickland Goodall: Out-patients.
TUESDAY.—Dr. P. Hamill: The Physiology of the Circulation. Sir S. Russell-Wells: Sphygmomanometers and Arteriometers. Dr. F. W. Price: Ward Demonstration. Sir S. Russell-Wells: Out-patients.
WEDNESDAY.—Dr. John Parkinson: The Uses of the Polygraph. Dr. F. W. Price: Cardiac Arrhythmias. Dr. H. B. Weir: Pathological Demonstration. Dr. R. O. Moon: Out-patients.
THURSDAY.—Dr. John Parkinson: The Uses of the Polygraph. Sir S. Russell-Wells: Angina Pectoris. Dr. J. Strickland Goodall: Ward Demonstration. Dr. F. W. Price: Out-patients.

FRIDAY.—Dr. B. T. Parsons-Smith: The Electro-Cardiograph. Dr. R. O. Moon: Mitral Stenosis. Dr. John Parkinson: Ward Demonstration. Dr. John Parkinson: Out-patients.
SATURDAY.—Dr. P. Hamill: Ward Demonstration.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C. 1.

POST-GRADUATE COURSE: OCTOBER–NOVEMBER, 1923.

CLINICAL LECTURES AND DEMONSTRATIONS.

MONDAY, Oct. 15th.—2 P.M., Out-patient Clinic: Dr. Hinds Howell. 3.30 P.M., Subacute Combined Degeneration: Dr. James Taylor.
TUESDAY, Oct. 16th.—2 P.M., Out-patient Clinic: Dr. Grainger Stewart. 3.30 P.M., Disseminated Sclerosis and its Treatment: Dr. Risien Russell.
THURSDAY, Oct. 18th.—2 P.M., Out-patient Clinic: Dr. Kinnier Wilson. 3.30 P.M., Magnus and de Kleijn Reflexes in Man: Dr. Walshe.
FRIDAY, Oct. 19th.—2 P.M., Out-patient Clinic: Dr. Gordon Holmes. 3.30 P.M., Myelitis: Dr. Collier.

COURSE OF LECTURES AND DEMONSTRATIONS ON NEURO-PATHOLOGY.

MONDAY, Oct. 15th.—12 noon, Cerebro-spinal Fluid Pathology: Dr. J. Godwin Greenfield.

A COURSE OF LECTURES on the ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM will commence on Oct. 16th.

Mr. Armour and Mr. Sargent operate at the Hospital on Tuesday and Friday mornings at 9 A.M., or at such other times as may be announced.

The fee for the Course, including Pathology, is £5 5s. The fee for the Anatomy and Physiology Lectures will be £3 3s., but this Course will only be given if six or more entries are received. If taken in conjunction with the Clinical and Pathological Courses, an inclusive fee of £7 7s. will be charged. Any part of the Course may be taken separately. Special arrangements will be made for those unable to take the whole Course. Fees should be paid to the Secretary of the Hospital at the Office on entering for the Course.

C. M. HINDS HOWELL, Dean of Medical School.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY, Oct. 18th.—4 P.M., Dr. Paterson: Convulsions in Infancy and Childhood.

LIVERPOOL UNIVERSITY CLINICAL SCHOOL. (At 3.30 P.M. each day.)

MONDAY, Oct. 15th (at the Hospital for Women).
TUESDAY (at the Maternity Hospital).—Dr. Willett: Primigravida.
WEDNESDAY (at the St. Paul's Eye Hospital).—Mr. Stevenson: Ophthalmia Neonatorum.
THURSDAY (at the St. George's Hospital).
FRIDAY (at the Eye and Ear Infirmary).—No lecture.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE CLINIC.

TUESDAY, Oct. 16th.—4.15 P.M., Dr. W. Dyson: Erythematous and Bullous Eruptions of the Skin.
FRIDAY.—4.15 P.M., Dr. F. Craven Moore: The Modern Conception and Investigation of Dyspepsia.

SALFORD ROYAL HOSPITAL.

(Special Course on Surgical Tuberculosis.)
THURSDAY, Oct. 18th.—4.30 P.M., Mr. G. Wright: The Surgery of Pulmonary Tuberculosis.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

MONDAY, Oct. 15th.—5 P.M., Dr. A. Blackhall-Morison: The Progress of Neurology, Psychology, and Psychiatry during the Century since the Foundation of the Lectureship.
TUESDAY.—Second Lecture.
WEDNESDAY.—Third Lecture.

Appointments.

DILLON, F., M.D. Edin., has been appointed Medical Superintendent of Northumberland House Private Mental Hospital.

HURRELL, G., M.B., B.S., D.P.H., B.Hy. Durh., Assistant R.M.O., City Hospital, Walker Gate, Newcastle-on-Tyne.

Manchester, Whitworth-street West Hospital: BAILEY, K. V., M.B., Ch.B. Manch., GERAGHTY, W., M.B., Ch.B. Manch., BACON, W. B., and FILDES, W. E., House Surgeons. High-street Hospital: HULME, J. W., M.R.C.S., L.R.C.P. Lond., and BEGG, ELSIE C., M.B., Ch.B. Manch., House Surgeons. St. Mary's Hospitals: GRANT, MARJORIE A., Assistant Medical Officer for Children Out-patients.

Certifying Surgeons under the Factory and Workshop Acts: IVATT, E. R., M.R.C.S., L.R.C.P. Lond. (Cerrig-y-Druidion, Denbigh); COURTS, A. C. S., M.D., B.S. Lond. (Staveley, Derby).

Vacancies.

For further information refer to the advertisement columns.

Ashton-under-Lyne District Infirmary.—H.S. £150.
Bethlem Hospital, Lambeth-road, S.E.—Two Res. H.P.'s.
Birmingham, Queen's Hospital.—Path. £100.
Bradford Royal Infirmary.—Hon. Asst. S.
Cape Town University.—Wernher-Beit Prof. of Bacteriology.
Cardiff, King Edward VII. Welsh National Memorial Association.—Second Asst. R.M.O. £250.
City of London Hospital for Diseases of the Heart, Victoria Park, E.—H.P. £125.
City of London Mental Hospital, near Dartford, Kent.—Second Asst. M.O. £350.
Denbighshire County Council.—Asst. M.O.H. £600.
Dumfries, Crichton Royal.—Asst. P. £350.
Durham County Council Education Dept.—Asst. School M.O. £600.
East London Hospital for Children and Dispensary for Women, Shadwell, E.—R.M.O. £200. H.S. £125. Radiologist. £100. Dermatologist.
Elizabeth Garrett Anderson Hospital, Euston-road, N.W.—Asst. Radiologist. £50 to £100.
Gloucestershire Royal Infirmary.—Hon. Anæsth. Two Hon. Dental Surgeons.
Hospital for Consumption and Diseases of the Chest, Brompton, S.W.—H.P. Also Res. M.O. £500.
Hospital for Epilepsy and Paralysis, Maida Vale, W.—Res. M.O. and H.P. £150 and £100 respectively.
Italian Hospital, Queen-square, W.C.—Hon. Ophth. S.
Leeds Public Dispensary.—Sen. Res. M.O. £200.
Leicester Royal Infirmary.—H.S. £150.
London County Mental Hospital Service.—Seventh Asst. M.O. £432.
Manchester Hospital for Consumption and Diseases of the Throat.—Hon. Asst. Phys.
Manchester Royal Infirmary.—Female Asst. Res. M.O. £100.
Manchester, St. Mary's Hospitals.—H.S. £50.
Metropolitan Hospital, Kingsland-road, E.—Sen. H.P. and H.S., Jun. H.P., and three Jun. H.S.'s. Each £100.
National Dental Hospital, Great Portland-street, W.—Hon. Anæsthetist.
Poplar Parish.—Dist. M.O. £200.
Portsmouth Workhouse Infirmary, &c.—Second Asst. Res. M.O. £425.
Prince of Wales's General Hospital, Tottenham, N.—Hon. Asst. S. to Ear, Nose, and Throat Dept.
Richmond Royal Hospital, Surrey.—Asst. H.S. £100.
Royal London Ophthalmic Hospital, City-road, E.C.—Sen. H.S. £150.
Royal National Orthopædic Hospital, 234, Great Portland-street, W.—Clin. Assts. £105.
Royal Northern Hospital, Holloway, N.—H.P. and H.S. Each £75.
St. Helens County Borough.—Asst. M.O. £600. Also Asst. M.O.H. £450.
St. Mary, Islington, Infirmary, Highgate Hill.—Asst. Med. Supt. £500.
St. Pancras Hospital, Pancras-road, N.W.—Female Asst. M.O. £350.
Sheffield Union Hospital.—Res. Asst. M.O. £250.
Staffordshire General Infirmary, Stafford.—H.S. £200.
Talgarth, Breconshire, Mid Wales Counties Mental Hospital.—Asst. M.O. £350.
University College Hospital, Gower-street, W.C.—Hon. Asst. in Ear, Nose, and Throat Department.
Victoria Hospital for Children, Tite-street, Chelsea, S.W.—Temp. Physician to Out-patients.
West Hartlepool, Cameron Hospital.—H.S. £200.
York County Hospital.—Res. M.O. £150.

Births, Marriages, and Deaths.

BIRTHS.

HOLMES.—On Oct. 5th, at Wimpole-street, W., the wife of Gordon Holmes, C.M.G., M.D., of a daughter.
JEX-BLAKE.—On Sept. 13th, at Kyuna, Nairobi, Kenya Colony, to Lady Muriel and Dr. A. J. Jex-Blake—a daughter.
PENDERED.—On Oct. 1st, at West End, Hants, the wife of J. H. Pendered, M.D., F.R.C.S., Southampton, of a son.
STANLEY.—On Oct. 5th, at Rue des Belles Feuilles, Paris, the wife of E. Gerald Stanley, M.S., F.R.C.S., M.D., of a daughter.

MARRIAGES.

GALBRAITH—BOWEN-JONES.—On Oct. 1st, at St. George's, Beckenham, Captain Douglas Hugh Aird Galbraith, M.C., M.R.C.S., L.R.C.P., to Hannah Bowen-Jones, R.R.C., only daughter of Mrs. Bowen-Jones, of Conwil, Carmarthenshire.
LITTLE—FORRER.—On Oct. 3rd, at St. Barnabas Church, Kensington, Captain Joseph Pearson Little, R.A.M.C., to Alice Cleopatra, younger daughter of Mr. and Mrs. Jefferson Forrer, of Alexandria, and niece of the late Henry Forrer, Liverpool.
PATERSON—MURPHY.—On Sept. 27th, at the British Consulate, Cairo, Dr. T. W. S. Paterson, M.A., M.B. Camb., Barrister-at-Law, Middle Temple, to Mrs. E. H. Murphy.

DEATHS.

KEEN.—On Oct. 2nd, at St. Leonards-on-Sea, William Keen, M.D., of Oakley-street, Chelsea, S.W.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

THE HISTORY OF A SURGICAL SOCIETY.

IN 1872 Bernard v. Langenbeck, Gustav Simon, and Richard Volkmann conceived the idea of forming a surgical society with an annual congress of three to four days' duration. The idea was announced to a number of German surgeons by means of a circular letter, with the result that in April, 1872, the first meeting was held under the presidency of v. Langenbeck, a post which he held with distinction until 1886, a year before his death. Victor v. Bruns was elected as vice-president, Volkmann and Gurlt as secretaries, and Friedrich Trendelenburg as treasurer. Dr. Trendelenburg has now collected,[1] summarised, and edited the reports of the meetings of this Deutsche Gesellschaft für Chirurgie during the first 25 years of its existence. Personal reminiscences of the parts played by himself and others add greatly to the interest of the book. Baum, Bardeleben, Billroth, and Simon formed the first committee. Although it was to Simon that the credit was given of originating the idea, and it was to him and his untiring efforts that the success of the scheme was due, his inability to speak publicly, "schwätzen" as he called it, prevented him from taking so prominent a place at the meetings as Langenbeck or Volkmann.

By dividing the subject-matter into the obvious headings, Dr. Trendelenburg traces for us the development of surgical thought and practice in its various branches during the first 25 years following the formation of the society, and we are shown the phases and vicissitudes through which new scientific ideas fought their way to acceptance or rejection. The account of the views that were held on septic wounds and compound fractures in military and civil practice forms fascinating reading. "Everyone is agreed," said Pirogoff, "that pus formation in gunshot wounds is unavoidable." If a gunshot fracture healed with only slight suppuration, without extrusion of a sequestrum, it was assumed that the case was one of simple fracture without splintering, for as Simon maintained, if a compound fracture was present, infection invariably took place and led to death in a few weeks. The sensation caused by Lister's theories and the resistance to them, the advent of antiseptics and the antagonism to these, and the occurrence of iodoform poisoning, are all reflected in the discussions held by the society. The debate in 1892 on local versus general anæsthesia, or rather the abrupt cessation of the debate must have long remained vivid in the minds of all those who were present. Schleich opened the discussion advocating strongly on humanitarian and moral grounds the universal use of local anæsthesia. When he ceased speaking Bardeleben jumped to his feet, "his clear-cut face flushed with anger, surrounded by his waving white beard," and with an excited voice said, "Gentlemen, we do not vote in our society, but when anything is said such as the last sentence of the last speaker, we are at liberty to speak out our opinion. . . . I ask those who are convinced of the truth of what the last speaker has said to hold up their hands. Gentlemen, no hands are raised. . . . Will those who wish for a discussion hold up their hands. No hand is raised. There is, therefore, no discussion." Compare this position with that held to-day, when in most of the continental hospitals 70–80 per cent. of all operations are carried out under local anæsthesia.

The history of blood transfusion well repays perusal. The blood was thought at one time to influence the psychology of the individual, and Elsholz in 1667 suggested that transfusion of the blood from a choleric personality might correct the temperament of a phlegmatic, and that an unhappily married couple might be brought into harmony by reciprocal blood transfusion! The chapter on the surgery of the gall-bladder illustrates how gradually surgery has advanced since that time. Cholecystectomy versus cholecystotomy was discussed as freely then as now, and who can say when the questions will be settled? But we have progressed since the days of humeral pathology, when hæmorrhage from the rectum due to hæmorrhoids was looked upon as similar to menstruation—a "charitable gift of nature." To those interested in the history of surgery this book should appeal.

[1] Die Ersten 25 jahre der Deutschen Gesellschaft für Chirurgie. By Friedrich Trendelenburg. Berlin: Julius Springer. 1923. Pp. 467. 10s.

THE PROTECTION OF THE GAS CONSUMER.

ON Oct. 1st was published the last of three special supplements to the *Manchester Guardian*, which between them cover all aspects of the gas industry. The first issue, which appeared on Sept. 10th, included an historical survey and a section devoted to coal and coal conservation; the second issue, dated Sept. 24th, was devoted to manufacture and distribution of gas, and smoke abatement and public health. The third issue relates to the practical application of gas in modern civilisation, and to the economics and organisation of the industry; it also contains a brief summary of "the four chief safeguards by which gas consumers are protected against possible underhand dealing." These are as follows:—

1. *Parliament.*—Suppliers of gas are not at liberty to change the quality of their gas except in accordance with Parliamentary statutes; nor may they alter the calorific value of the gas without adjusting appliances, if such adjustment be necessary to enable consumers to extract a maximum efficiency from the altered quality of the gas. (Such adjustment is usually unnecessary for altered calorific values within comparatively narrow limits—e.g., a change from 450 to 475, or from 475 to 500 British thermal units per cubic foot.) A sliding scale admits of higher dividends only when gas is cheapened, and prevents the shareholder in a gas company from profiting at the expense of the consumer.

2. *Board of Trade.*—No undertaking can benefit by the Gas Regulation Act (1920) except by receiving an order from the Board of Trade; and such an order is only issued after the Board is satisfied that its terms are in the consumer's interest.

3. *Official Testing.*—The calorific value of gas is carefully tested, frequently and without warning, by an officially appointed neutral party. The consumer is, therefore, paying only for heat supplied, because (*a*) a public authority certifies the maintenance of the declared calorific value of the gas; (*b*) his meter, tested and guaranteed by a neutral party, records the number of feet consumed; and (*c*) where gas is sold on the therm basis a simple calculation shows the number of therms contained in the number of cubic feet consumed—namely, multiplication of the number of cubic feet by the declared heating value, and division of the results by 100,000.

4. *Local Authority.*—Consumers, if dissatisfied, have the right, by Act of Parliament, to go to their local authority and demand that the Board of Trade be asked to revise the local standards.

THE MEDICAL WHO'S WHO.

THIS publication was suspended in 1918 on the death of its late editor. Begun in 1912 as a very modest volume of 300 pages, it grew through successive editions, all of which are out of print, to a substantial volume, and the Grafton Publishing Co., Ltd., Chichester House, Chancery-lane, W.C. 2, have now acquired the copyright, and will reissue the work on a revised plan. All registered practitioners will shortly receive a form to be filled up, which we are informed has been submitted to the General Medical Council. The new book of reference aims at blending the good features of the Medical Directory with those of "Who's Who," and if this is successfully accomplished the book should prove of value to the practitioner, and be of general use. The editor of the "Medical Who's Who" is appealing for an early return of the forms.

AN IMPROVED HAIR-BRUSH.

THE advantages of a hair-brush which can be cleaned and sterilised at any moment by passing it through a spirit flame, by immersing it in boiling water, or by using disinfectants, are obvious, and these advantages are claimed for the Sindix All-metal Hair-Brush. It is made in two shapes, the military, and the ordinary handled form for the convenience of ladies. The "bristles" are made of fine-drawn, non-rusting wire, and the body of the brush is of aluminium and perforated with openings so that the cleansing or disinfecting fluid can pass freely through all parts of it. The makers are Sindix, Ltd., 5, John-street, Adelphi, London, W.C., and the price is 12*s.* 6*d.*

A BEE-STING ON THE UVULA.

AN unusual accident occurring to a motor cyclist is recorded by Dr. C. W. Geiger and Dr. J. H. Roth in the *Journal* of the American Medical Association of August 25th. The victim was a youth into whose open mouth a bee flew while he was travelling presumably at some pace. After several attempts the insect was dislodged. Violent vomiting followed and attempts to gargle caused the pain to be worse. Six hours after the accident the patient had slight difficulty in speech, and considerable difficulty in swallowing. Examination of the pharynx showed extreme œdema of the uvula, which was about the size of a man's thumb, and of the pillars on the right side. Cocaine was applied to render examination possible; at the junction of the anterior pillar and the uvula the stinger of the bee was found and removed, silver nitrate (10 per cent.) was applied as an astringent; the patient was given a gargle of saturated solution of sodium bicarbonate to be used frequently and was soon relieved.